DOCUMENT RESUME

ED 145 967 PS 009 653

AUTHOR Barclay, James R.; And Others
TITLE Some Effects of Schooling: A Three Year Follow-Up of a Title III Project.
INSTITUTION Educational Skills Development, Lexington, Ky.; Vigo County School Corp., Terre Haute, Ind.
SPONS AGENCY Bureau of School Systems (DHEW/OE), Washington, D.C.
PUB DATE 8 Oct 75
NOTE 156p.; Some pages may not reproduce clearly due to print quality

EDRS PRICE MF-$0.83 HC-$8.69 Plus Postage.
DESCRIPTORS Academic Achievement; Behavior Change; *Comparative Analysis; Contingency Management; *Educational Alternatives; *Educational Strategies; *Elementary Education; Evaluation Methods; Longitudinal Studies; Open Education; *Program Descriptions; *Program Evaluation; Social Development; Socioeconomic Background; Tables (Data); Traditional Schools
IDENTIFIERS *Elementary Secondary Education Act Title III; Indiana (Terre Haute)

ABSTRACT

This paper presents an evaluation of a 3-year Title III project carried out in the Vigo County School Cooperation, Terre Haute, Indiana. The project involved the evaluation of three differing instructional methodologies utilized in three elementary schools which also differed in the socioeconomic background of the students. The Dixie Bee school, which was located in a predominantly upper middle class area, utilized traditional cognitively oriented methods throughout the course of the project. No changes were instituted. The Rio Grande school was described as a middle class school. This was a 3-year-old school which was designed and staffed to implement many open classroom techniques. No specific changes were implemented in this school. The West Vigo school was located in a predominantly lower middle to lower socioeconomic class area. A variety of new techniques, many of which were behavior modification techniques, were utilized to develop both cognitive and affective skills. A variety of formal and informal evaluation techniques were used before, during and after the 3-year period. Although a multitude of results are presented, interpretation is difficult. The results do suggest, however, that students in the West Vigo target school did show significant increases in some aspects of achievement, and students with initial social-affective problems did tend to show significant improvement. (BD)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

ED145967

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

SOME EFFECTS OF SCHOOLING: A Three Year Follow-up of a Title III Project

Prepared for:

Vigo County School Corporation
Terre Haute, Indiana

Prepared by:

James R. Barclay, Ph. D.
University of Kentucky

with

Robert M. Covert, Ph. D.
The University of Virginia

Thomas W. Scott, M. S.
Vigo County School Corporation

William E. Stilwell, Ph. D.
University of Kentucky

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

William E. Stilwell

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

PS 009653

Under contract with:

Educational Skills Development
179 East Maxwell Street
Lexington, KY 40508

Date: 8 October 1975

Permission to reproduce this document has been granted to the ERIC System and its system contractors by the authors and the Vigo County School Corporation.

FOREWORD

This evaluation study covers a three year period of schooling for a number of students in the Vigo County School Corporation (Terre Haute Indiana). Three elementary schools differing in socio-economic composition, architecture and mode of instruction were involved in a three year study to determine the effects these variables have on achievement, social-affective skill development and classroom climate.

Though the major portion of this report was written by the senior author, considerable support was provided by Mr. Thomas W.Scott, the project director, Dr. Robert Covert of the University of Virginia, and Dr. William E. Stilwell of the University of Kentucky. In addition, the report could not have been completed without the assistance of a host of graduate students, computer programmers, and secretarial staff.

James P. Barclay Ph.D.
University of Kentucky

October 8, 1975

Abstract

Some Effects of Schooling: a Three-year Follow-up of a Title III Project Vigo County Schools, Terre Haute Indiana.

Authors: James R. Barclay Ph.D., Robert Covert Ph.D., Thomas W. Scott M.A. and William E. Stilwell III Ph.D.

This study is an evaluation of a three-year project supported by Title III funds in the Vigo County School Corporation at Terre Haute Indiana. The purpose of the project was to determine some of the effects of three differeing approaches to schooling. Three schools were identified, Dixie Bee was a traditional elementary school with largely upper middle class children attending it. Rio Grande was a middle class school in which an open environment was fostered, team teaching and flexible scheduling. West Vigo was a predominantly lower middle to lower socioeconomic class school in which a variety of new techniques were tried out centering chiefly on a behavior modification approach.

A variety of assessment devices were used from the inception of the project in 1972 until the close of the project in 1975. Some of these devices included achievement tests such as the Nelson Reading Test and the Iowa Test of Basic Skills. Other instruments were used to measure the social-affective interaction of students in the classroom. The major instrument here was the Barclay Classroom Climate Inventory, a computerized system for evaluating children in terms of their self-report, peer judgments and teacher expectations. Some children were tested over the span of the project and therefore repeated measures were available.

Utilizing a number of statistical procedures including step-wise regression, multivariate analysis of variance and simple descriptive frequencies with graphs, the principal findings of this study are:

1. There are differing styles of achievement and social interaction in the three schools.

2. These styles of achievement and social interaction are largely related to an interaction between socioeconomic status and instructional mode.

3. West Vigo as the target school showed a significant increase in certain aspects of achievement, and students with indication of social-affective problems made significant improvement.

TABLE OF CONTENTS

		Page
Chapter 1.	Educational Alternatives for Socioeconomic Subgroupings	1
Chapter 2.	The Design and Format of the Evaluation	14
	The Questions	16
	Format	17
	Limitations	18
Chapter 3.	A Summary of Previous Research Completed	19
	The 1972 Study	20
	The 1973 Study	24
	Additional Studies on the 1972-1973 Data	27
	Conclusion	32
Chapter 4.	The Three Year Follow-Up Studies	50
	Achievement	50
	Differential Predictions of Achievement from Social-Affective Measures	58
	Changes in Social-Affective Dimensions	78
	Conclusion	100
Chapter 5.	Summary and Conclusions	101
References		118
Appendix.	Sample BCCI and BLNI reports	

LIST OF TABLES

Table		Page
1	Pre and Posttest Means on Nelson Reading Test	25
2	Step-wise Regression for Male Students with Nelson Reading Vocabulary Score as Dependent Variable & Pretest BCCI Scores as Independent Variables	33
3	Step-wise Regression for Male Students with Nelson Reading Paragraph Score as Dependent Variable & Pretest BCCI Scores as Independent Variables	33
4	Step-wise Regression for Female Students with Nelson Reading Paragraph Meaning Score as Dependent Variable and Pretest BCCI Scores as Independent Variables	34
5	Step-wise Regression for Female Students with Nelson Reading Vocabulary Score as Dependent Variable and Pretest BCCI Scores as Independent Variables	34
6	Step-wise Regression for Male Students with Iowa Vocabulary Score as Dependent Variable & BCCI Scores as Independent Variables	35
7	Step-wise Regression for Male Students with Iowa Reading Score as Dependent Variable & BCCI Scores as Independent Variables	35
8	Step-wise Regression for Male Students with Iowa Mathematics Score as Dependent Variable and BCCI Scores as Independent Variables	36
9	Step-wise Regression for Female Students with Iowa Vocabulary Score as Dependent and BCCI Scores as Independent Variables	36
10	Step-wise Regression for Female Students with Iowa Reading Score as Dependent Variable and BCCI Scores as Independent Variables	37
11	Step-wise Regression for Female Students with Iowa Mathematics Scores as Dependent Variable and BCCI Scores as Independent Variables	37
12	Selected Pretest BCCI Predictor Correlations with Posttesting Achievement Scores	38
13	Step-wise Regression on Posttest Nelson Reading Vocabulary Scores Using Pretest BCCI Variables for Third Grade Males in SES 1 & 2 Categories	42

Table		Page
14	Step-wise Regression on Posttest Nelson Reading Paragraph Scores Using Pretest BCCI Variables for Third Grade Males in SES 1 & 2 Categories	42
15	Step-wise Regression on Posttest Nelson Reading Vocabulary Scores Using Pretest BCCI Variables for Third Grade Males in SES 3 & 4 Categories	43
16	Step-wise Regression on Posttest Nelson Reading Paragraph Scores Using Pretest BCCI Variables for Third Grade Males in SES 3 & 4 Categories	43
17	Step-wise Regression on Posttest Nelson Reading Vocabulary Scores Using Pretest BCCI Variables for Third Grade Females in SES 1 & 2 Categories	44
18	Step-wise Regression on Posttest Nelson Reading Paragraph Scores Using Pretest BCCI Variables for Third Grade Females in SES 1 & 2 Categories	44
19	Step-wise Regression on Posttest Nelson Reading Vocabulary Scores Using Pretest BCCI Variables for Third Grade Females in SES 3 & 4 Categories	45
20	Step-wise Regression on Posttest Nelson Reading Paragraph Scores Using Pretest BCCI Variables for Third Grade Females in SES 3 & 4 Categories	45
21	Step-wise Regression on Posttest Iowa Test of Vocabulary Scores Using Pretest BCCI Variables for Fourth & Sixth Grade Males in SES 1 & 2 Categories	46
22	Step-wise Regression on Posttest Iowa Test of Reading Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Males in SES 1 & 2 Categories	46
23	Step-wise Regression on Posttest Iowa Test of Mathematics Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Males in SES 1 & 2 Categories	46
24	Step-wise Regression of Posttest Iowa Test of Vocabulary Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Males in SES 3 & 4 Categories	47
25	Step-wise Regression on Posttest Iowa Test of Reading Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Males in SES 3 & 4 Categories	47
26	Step-wise Regression of Posttest Iowa Test of Mathematics Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Males in SES 3 & 4 Categories	47

Table		Page
27	Step-wise Regression on Posttest Iowa Test of Vocabulary Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Females in SES 1 & 2 Categories	48
28	Step-wise Regression on Posttest Iowa Test of Reading Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Females in SES 1 & 2 Categories	48
29	Step-wise Regression on Posttest Iowa Test of Mathematics Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Females in SES 1 & 2 Categories	48
30	Step-wise Regression on Posttest Iowa Test of Vocabulary Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Females in SES 3 & 4 Categories	49
31	Step-wise Regression on Posttest Iowa Test of Reading Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Females in SES 3 & 4 Categories	49
32	Step-wise Regression on Posttest Iowa Test of Mathematics Scores Using Pretest BCCI Variables for Fourth and Sixth Grade Females in SES 3 & 4 Categories	49
33	Sample Description for Three Year Follow-Up	50
34	Nelson Reading Scores (Males) 1973 and 1975 by School	51
35	Nelson Reading Scores (Females) 1973 and 1975 by School	52
36	Iowa Test of Basic Skills 1975 for Males Across Schools	53
37	ITBS 1975 for Females Across Schools	54
38	Iowa Test of Basic Skills for 6th Grade Males Across Schools for 1972 and 1975	56
39	Iowa Test of Basic Skills for 6th Grade Females Across Schools for 1972 and 1975	57
40	Step-wise Regression Using Nelson Paragraph Meaning Reading Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Males)	61
41	Step-wise Regression Using Nelson Vocabulary Reading Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Males)	62
42	Step-wise Regression Using Nelson Total Reading Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Males)	63

Table		Page
43	Step-wise Regression Using ITBS Vocabulary Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Males)	64
44	Step-wise Regression Using ITBS Reading Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variabled (Males)	65
45	Step-wise Regression Using ITBS Language (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Males)	66
46	Step-wise Regression Using ITBS Math Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Males)	67
47	Step-wise Regression Using SES (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variable (Males)	68
48	Step-wise Regression Using Nelson Reading Test Vocabulary (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variables (Females)	69
49	Step-wise Regression Using Nelson Reading Test Paragraph Meaning (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variables (Females)	70
50	Step-wise Regression Using Nelson Reading Test Total (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variables (Females)	71
51	Step-wise Regression Using ITBS Vocabulary Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variable (Females)	72
52	Step-wise Regression Using ITBS Reading Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variable (Females)	73
53	Step-wise Regression Using ITBS Language-1 Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variable (Females)	74
54	Step-wise Regression Using ITBS Math Score (5th Grade) as Dependent Variable and BCCI 3rd Grade Variables as Independent Variables (Females)	75
55	Step-wise Regression Using SES (5th Grade) as Dependent Variable and BCCI 3rd Grade Scores as Independent Variables (Females)	76

Table		Page
56	Summary of Regression Correlations by Achievement and School Using Simple Correlations (Males-Females)	77
57	Step-wise Regression on BLNI Self-Concept Deficits for Boys Using Pretest BCCI Factor Scores	80
58	Step-wise Regression on BLNI Self-Concept Deficits for Girls Using Pretest BCCI Factor Scores	80
59	Step-wise Regression on BLNI Group Interaction Deficits for Boys Using Pretest BCCI Factor Scores	80
60	Step-wise Regression on BLNI Group Interaction Deficits for Girls Using Pretest BCCI Factor Scores	81
61	Step-wise Regression on BLNI Self-Control Deficits for Boys Using Pretest BCCI Factor Scores	81
62	Step-wise Regression on BLNI Self-Control Deficits for Girls Using Pretest BCCI Factor Scores	81
63	Step-wise Regression on BLNI Verbal Deficits for Boys Using BCCI Pretest Factor Scores	82
64	Step-wise Regression on BLNI Verbal Deficits for Girls Using BCCI Pretest Factor Scores	82
65	Step-wise Regression on BLNI Energy Deficits for Boys Using BCCI Pretest Factor Scores	82
66	Step-wise Regression on BLNI Energy Deficits for Girls Using BCCI Pretest Factor Scores	83
67	Step-wise Regression on BLNI Cognitive-Motivation Deficits for Boys Using BCCI Pretest Factor Scores	83
68	Step-wise Regression on BLNI Cognitive-Motivation Deficits for Girls Using BCCI Pretest Factor Scores	83
69	Step-wise Regression on BLNI Attitude Deficits for Boys Using BCCI Pretest Factor Scores	84
70	Step-wise Regression of BLNI Attitude Deficits for Girls Using BCCI Pretest Factor Scores	84
71	Step-wise Regression of BLNI Self-Concept Deficits for Boys Using BCCI Posttest Factor Scores	84
72	Step-wise Regression of BLNI Self-Concept Deficits for Girls Using BCCI Posttest Factor Scores	85

Table		Page
73	Step-wise Regression on BLNI Group Interaction Deficits for Boys Using BCCI Posttest Factor Scores	85
74	Step-wise Regression on BLNI Group Interaction Deficits for Girls Using BCCI Posttest Factor Scores	85
75	Step-wise Regression on BLNI Self-Control Deficits for Boys Using BCCI Posttest Factor Scores	86
76	Step-wise Regression on BLNI Self-Control Deficits for Girls Using BCCI Posttest Factor Scores	86
77	Step-wise Regression On BLNI Verbal Deficits for Boys Using BCCI Posttest Factor Scores	86
78	Step-wise Regression on BLNI Verbal Deficits for Girls Using BCCI Posttest Factor Scores	87
79	Step-wise Regression on BLNI Energy Deficits for Boys Using BCCI Posttest Factor Scores	87
80	Step-wise Regression on BLNI Energy Deficits for Girls Using BCCI Posttest Factor Scores	87
81	Step-wise Regression on BLNI Cognitive-Motivation Deficits for Boys Using BCCI Posttest Factor Scores	88
82	Step-wise Regression on BLNI Cognitive-Motivation Deficits for Girls Using BCCI Posttest Factor Scores	88
83	Step-wise Regression on BLNI Attitude Deficits for Boys Using Posttest Factor Scores	88
84	Step-wise Regression on BLNI Attitude Deficits for Girls Using Posttest Factor Scores	89
85	Summary Step-wise Regression Between BLNI Scales and BCCI Factor Scores for Males	89
86	Summary Step-wise Regression for BLNI Variables Using BCCI Factor Scores for Females	90
87	Selected BCCI Subtest Soores for Females Across Schools and Years (1972, 1975)	93
88	Selected BCCI Subtest Scores for Males Across Schools and Years (1972, 1975)	94
89	Descriptive Statistics for Females on Subtests of the BLNI Across Schools	96
90	Descriptive Statistics for Males on Subtests of the BLNI Across Schools	98

Table		Page
91	Comparison of Suspected Problems Percentages Across Schools Pre and Post	106
92	Overall Temperament Comparisons Between Schools in Percents	110

List of Figures

1	Teacher Evaluation Summary	101
2	West Vigo Pre and Post Comparisons on a Sample of Children for Suspected Problems	103
3	Dixie Bee Pre and Post Comparisons on a Sample of Children for Suspected Problems	104
4	Rio Grande Pre and Post Comparisons on a Sample of Children for Suspected Problems	105
5	Overall Plot of Changes for Rio Grande	111
6	Overall Plot of Changes for West Vigo	112
7	Overall Plot of Changes for Dixie Bee	113

CHAPTER 1

EDUCATIONAL ALTERNATIVES FOR SOCIOECONOMIC SUBGROUPINGS

Prepared by Thomas W. Scott, Project Director

This project is designed to evaluate on a longitudinal basis the efficacy of three differing elementary school educational programs. (Diagram) Both cognitive and affective changes will be measured and compared to evaluate the educational strategies' effect. The rationale is to emphasize the need for multidimensional curricula designed to meet the unique psychological and achievement motivation needs of different social class groupings within a system.

Models for Observing Different Educational Inputs on Learning

		Instructional Method	General Socioeconomic Levels	Building Design
1.	CONTROL Dixie Bee	Traditional	Upper	Closed
2.	CONTROL Rio Grande	Open Concept Continuous Progress	Middle	Open
3.	TARGET West Vigo Elem. School	Positive/Behavioral (Eclectic)	Lower	Modified-Flexible Open

"Why study educational methodologies in relation to socio-economic level and what consequences may the results have on education?"

School administrators, parents, teachers, and principals all have opinions about the effectiveness of various educational alternatives; however, there are no definite answers. Most children in upper socio-economic levels progress successfully in traditional, cognitive-centered educational programs. Lower socioeconomic children just as consistently do less well with this educational method. Perhaps varying methods of education used may be more beneficial for some of the children at specific levels. Using methods in various combinations (behavioral/affective/cognitive/team teaching) should be evaluated and compared. Though everyone has an opinion, research is needed to give more conclusive answers.

The VCSC is presently initiating a three year project to evaluate the effects of instructional methodologies within three different types of schools and social settings. Both psychological and achievement motivational needs will be evaluated. This experiment in multidimensional curricula is organized under Title III of the Elementary and Secondary Education Act and funded initially by the federal government.

In the long run does treating different children in different ways enhance their educational opportunities?

The teacher who individualizes materials and instruction and who teaches to the children's specific weaknesses within her/his room would generally be called a "good" teacher. Fellow staff members down the hall who teach to the group may not be "bad" teachers, but they are not as effective as their more conscientious colleague.

Not all children are alike - This is a simple statement which most people would accept as true. Still, many school corporations

have as their goal equal education for all. Though this goal is considered admirable, in reality, it may not lead to maximum educational achievement for all those who attend school. These school districts are functioning much like the above teacher who teaches to the group. It has been consistently shown that various social class subgroupings within society do not achieve equally. Perhaps we should treat children differently and use different educational methodologies to achieve the best results. Couldn't large school systems do a more efficient job if their schools were designed to meet the individual, specific needs of the children within the various districts? There are no conclusive answers to this question. The question is now being studied.

If new research findings on individualization of instruction and classroom management techniques hold true then there may be reason to expect some change in teacher method. In the past, the teacher's major responsibility has been to instruct the mode of the group regardless of the specific type child being taught. Positive reinforcement, negative reinforcement and affective educational methods were sometimes used unknowingly and inconsistently. Today's teachers are more aware of the effect their behaviors have on children, but it has yet to be shown if one method works better with one type group than another. Should Method A be shown to the superior with one social group and Method B superior with a second social group, "prescriptive administration" would be the result. Administrators could designate the type facility and instructional method shown to be most effective in relation to the dominent social influence within an area. Those teachers whose interests were compatible with the prescribed method could be given assignment priority.

All members of the community would be benefited. Children would be affected both socially and academically, because they would be learning by the method shown to be most successful with groups of their particular background. Teachers would have the opportunity to instruct in a setting which uses the method most preferred by them. Pupil Personnel Services workers would be chosen because of particular interests and expertise and assigned accordingly. They would not do general testing and make global recommendations but would help both teachers and community people with prescribed objectives, dependent upon the educational emphasis needed. The school would serve as a resource center for parent education in child management and understanding. The local school corporation would have the satisfaction of knowing they are being more accountable to the public and are better meeting the needs of particular students. Not only are teachers which have always individualized instruction continuing to do so but those that have not, are teaching children with the method shown to be most effective for them. The three schools involved in this research are described below:

Newsletters
Vol. 3
Vol. 8

Dixie Bee

The Dixie Bee Elementary School program has been termed traditional from this research project's standpoint. Its program is centered around a skill development emphasis with traditional pupil services. Though the structure is new and well equipped, few walls can be moved and it is not advantageous for flexible scheduling and team teaching methods. During the last three years, the school's philosophy and program has

not drastically changed. Any changes which have taken place have been a result of internal evolutionary changes within the school staff.

Dixie Bee is situated within an upper-middle class socio-economic area and their students have always done well on nationally normed academic tests. Their program is cognitively-centered and consists of self-contained classroom units organized by grade levels. The homeroom teacher teaches core academic areas and resource personnel teach special subjects. The specific types and methods of instruction vary according to the teacher and consist of a cross-section of methods and techniques as would generally be found in a typical sampling of today's schools. No one method or label could be fairly attached to this school because of the diversity involved.

Dixie Bee's main purpose was to serve as a control facility and faculty. The only specific project or school corporation involvement unique to this school has been to conduct testing to measure attitudes and academic trends which have occurred without outside influence over a three year period.

Rio Grande

The Rio Grande Elementary School program has been labeled as controlled-open during the study. When this school opened three years ago, the staff was handpicked according to specific teaching attitudes and characteristics; they were not an already existing staff which moved from an old building to a new one. The local school corporation's goal was to facilitate the development of an open-concept program which would still utilize more control than completely free models. Those staff members chosen to be a part

of this effort had all previously displayed a desire to individualize, team teach, use behavioral objectives, implement affective techniques and develop a child-centered program. With administrative and corporation support, Rio Grande has stepped into a more progressive educational program than is typical in the majority of elementary programs.

The open-concept design at Rio Grande has three pods (clusters of classes with a two year range) which all project around the IMC. The teachers in each pod work as a team in program development, scheduling, pupil evaluation and in planning various activities. This has been a most rewarding aspect and advantage of the program.

The open-design facility and cooperative, sharing faculty has enhanced the implementation of a continuous progress program.

There are fourteen reading, spelling, and math levels which cover a readiness to seventh grade range. Children are regrouped for two hours each day according to ability; not age. As children progress from one level to another, a certificate of advancement is presented to them. All children progress within these fourteen levels, according to individual progress and displayed ability in the completion of criterian objectives, not according to age and grade level norms. In keeping with the continuous progress philosophy the staff has developed its own pupil evaluation program, a non-graded form which stresses the mastery of skills for each subject area. As a child masters the skills required, they move on to the next level. In addition, parent and teacher conferences are held in the fall and spring of each year.

While core academic areas are taught on continuous progress levels, other subject areas are being developed as revolving study units. Much teaming is being done in social studies, science and health. All types of grouping activities can be found within separate two year pods, from a small part of a class to groups involving several classes for the same activity. All special subject areas are taught by classes in the same manner that they would be handled in other VCSC elementary schools.

Perhaps the most significant and obvious strength felt by the Rio Grande staff and patrons relates to school atmosphere. It seems quite possible that related to the beliefs of success through continuous progress, having a school without failures and of individual instruction, is the deep feeling "that our kids like school." This program may be termed one of affective education.

The main source of motivation at Rio Grande has come through teacher commitment and belief in an open program and the administrative support behind them. Once again, Rio Grande's main purpose was to serve as a second, control facility and faculty. How much can be done by a faculty dedicated to change with a complimentary facility and administrative school corporation backing? The only specific project involvement unique to this school has been to conduct testing to measure attitudes and academic trends which have evolved over a three year period.

Newsletters
Vol. 3
Vol. 7

West Vigo

The West Vigo Elementary School program has been called positive/behavioral because of its philosophy and curriculum interests. The faculty was not handpicked for a specific purpose at the study's beginning so the main question being asked is, "How much influence and change can take place within an existing faculty over a three year period?"

The project's main impact has centered upon this school. In past years, it has functioned in the traditional manner and achievement scores have consistently been below national norms. As may be assumed, this school is in a lower socioeconomic class area. Behavior modification techniques, team-teaching, a heavy emphasis upon success experiences, assistance from teacher aides, individualization and a personalized interest in students are variables being implemented into this elementary program. During the previous three year period, West Vigo has become much more open in teaching techniques, staff cooperation, use of facilities, the use of positive recognition for improvement, etc.

The basic objectives worked toward are listed below and followed by the activities used to achieve them. It is our belief that such changes will be reflected in objective cognitive and/or affective evaluation data in addition to the subjective/informal observations which are already being verbally expressed.

Study Objectives

Philosophy -

1. Each teacher should have a better understanding and more

humanistic philosophy toward children. Each child will be treated differently by the teacher according to his needs, and more efforts will be made to motivate those children who do not naturally want to learn. The teacher will feel more responsible for those experiencing difficulty and make more specific efforts to help them.

Teacher Emphasis -

2. The number of positive comments made by teachers will increase. All teachers will emphasize the good things children do and will make their successes more rewarding. Poor work and behavior which was previously criticized will be ignored and de-emphasized. External, internal and privilege type rewards and privileges will be used daily to emphasize the good.

In-service/Current Education on Education -

3. The teachers' method of instructing will change. Teachers will actually know what the terms behavior modification, contingency contracting, rewards, team teaching and individualization mean. They will also understand the theory behind these ideas and be using them on a day-to-day basis. Most teachers will be using reward systems continuously and have partitions open to exchange ideas and students. The fear of using new ideas will decrease.

Affective/Atmosphere Changes -

4. Through team teaching and individualized instruction (and with Title III aides) children may more easily develop positive feelings toward teachers and school because of the more personalized interest that can be given at specific levels. The children will notice this difference themselves.

The poor student who has been traditionally left out, pressured or ignored, will be dealt with more consistently as an individual or in a small group. The entire classroom climate will improve, as a result of increased positive and success experiences.

The Staff As A Team -

5. Teachers will more readily discuss both successes and failures among themselves and accept others' ideas. There will be a greater feeling of unity and working as a group vs. each teacher feeling like a separate, self-contained unit in their own classroom. This will be realized as teachers open up and begin sharing children, materials, groupings, etc. This should be an outgrowth of accomplishing the previous four objectives and will show a direct relationship to their success rates.

Motivators -

6. Many more creative type reinforcers will be used as motivators. This goes along with not expecting all children to come to school with an internalized need to learn. Children will be rewarded with more than the satisfaction of a job well done in hopes that incentive will increase and they will see a reason for learning.

Parent Contact -

7. Parents will be rewarded by personalized methods when their children do things well at school. Not all school contacts will be because children are in trouble. The same general philosophy being used with the children will be tried on the parents. More positive home atmospheres about school should develop.

Teacher Adaptability - (Volunteer/drafted) -

8. The results of Rio Grande's and West Vigo's instructional

programs, in comparative terms, over a three year period, will answer to what extent the educational programs and staffs have altered their behaviors.

Activities

1. Program introduction and acquaintance
2. During school in-service on behavior modification
3. Required projects
4. Rewards - (follow-up handouts)
5. Initiating token programs
6. Presenting informal applications on a daily basis
7. Open-school and team teaching in-services
8. Group planning meetings
9. Visitations
10. Application of teaming ideas
11. Title I tutorial aide input
12. Positive attitude in-services
13. Human Development Training (Title I)
14. Perceptual Workshops (Title I)
15. Behavioral Counseling Groups
16. Ideas in-services
17. Individual teacher consultation
18. Providing literature on key topics
19. Improve frequency of positive home contacts

*20. Additional Title I intervention

*Title I services have grown at West Vigo Elementary over the past three years. The main emphasis of the program has been to work

with those children who have traditionally not done well in school because of environmental deficits. There are presently about ten aides working with this type child at West Vigo Elementary. The main areas they are working on are reading, math, perceptual training and affective education. They are presently having a big impact upon the population to which they are assigned. The goals and objectives of this program are similar and compatible to the study goals and are an asset. It is necessary to consider the existence of this program when evaluating study results as it has made a definite contribution to helping children in the area.

The overall West Vigo programs major goal over the past three years has not been to follow one particular framework or model but to be offer a variety of approaches and to use those which most fit both teacher and individual student personalities. Change for the better has been a criterian--not a static performance or change in just one direction. Much effort has gone into facilitating this positive change--are student needs being more adequately met as a result?

There has been a three year pattern to the Title III programs intervention at West Vigo:

Year 1 - The use of intensive B.M. Programs (rigid ideas on individuals/groups)

Year 2 - Informal use of positive - behavioral ideas and team teaching methods based on individualization (positive teaching techniques)

Year 3 - Individual consultation (evaluation of program strength when not continuously applied and encouraged/dissemination)

The following are some questions being asked in relation to all three schools?

What are the critical factors most necessary to facilitate academic success?

Do certain groups of children learn under most any conditions and instructional method?

Are other groups more sensitive to educational techniques and need specific circumstances in order to achieve to their maximum?

What are the various aptitude treatment interactions within the following table?

			Socioeconomic Level		
			Lo	Med	Hi
School Treatments	Rio Grande (open)	Female			
		Male			
	Dixie Bee (Trad.)	Female			
		Male			
	West Vigo (eclectic)	Female			
		Male			

What are the relationships of cognitive development and affective development (for specific groups)?

How can school corporation funds be best spent to maximize educational achievement (cognitive/affective) at all levels?

The analyses being computed should shed light upon some possible answers to the above questions!!!

CHAPTER 2

THE DESIGN AND FORMAT OF THE EVALUATION

There are few school people who will disagree that affective education is important in the schools. Some refer to it under the older term of mental health. Others see it in the focus of developing skills in problems of living. Virtually all agree that prevention is better than coping with crises. However, the reasons why we have not proceeded beyond lip service to prevention are manifold. Some of these are: (1) the fear that if we define affective it becomes cognitive, (2) the belief that affective-social skill development is somehow derogatory to the main cognitive thrust of the schools, rather than complementary, (3) a notable lack of understanding of individual differences with a frequent choice to muster whole curricula to one point of view, (4) a notable lack of adequate instruments to measure affective dimensions, (5) a lack of correspondence between needs assessment and interventions, (6) failure to evaluate comprehensively, and (7) lack of research recognition of the tremendous complexity of the task of reviewing educational treatments and looking for straightforward linear change relationships.

The dimunition of federal funds for educational experimentation has been directly related to the poor generalizable results that have been obtained from most educational projects. Averch and his colleagues (1972) after comprehensively reviewing numerous research efforts in education made the following policy recommendations to the President's Commission on School Finance:

Research has not idenfied a variant of the existing system that is consistently related to student's educational outcomes.1

Increasing expenditures on traditional educational practices is not likely to improve educational outcomes substantially. 2

There seem to be opportunities for significant reduction or redirection of educational expenditures without deterioration in educational outcomes.

Innovation, responsiveness, and adaptation in school systems decrease with size and depend upon exogenous shocks to the system.3

Educational research is seriously deficient in terms of the size, scope, and focus of research efforts and in the integration of research results.

Research tentatively suggests that improvement in student outcomes, both cognitive and noncognitive, may require sweeping changes in the organization, structure, and conduct of educational experiences.

It is not relevant in this document to expand considerably on the impact of these recommendations, but it is evident from a careful reading both of the summary recommendations quoted above and the rationale preceding the recommendations that change in education does not come easy, and cannot be judged by traditional methods.

---

1 What is meant here is that there is nothing consistently and unambiguously demonstrated from research that makes a difference in students' outcomes. There is a great belief that socio-economic status in a large sense circumscribes learning, a considerable belief that teacher expectations alter learning outcomes, and an equal belief that peer relations condition outcomes. These contentions are quite well established, but research studies by and large do not provide clearly replicable outcomes dealing with these variables.

2 The implications of this recommendation are felt in continually reduced federal budgets for research and demonstration. Some have felt the problem is so bad that they will not fund research , but only process evaluation or some variation thereof.

3 The contention here is that the larger and more bureaucratic the school, the less resilient it is, the more it presumes on an organized curriculum, the less flexible it is to change, the less responsibility is found in local decision-making, and the more need for external shocks such as riots etc.

The purpose of this brief review of the status of evaluation of educational research is to provide the reader with some insight into the difficulty that attends a specific project such as this one. There are some real advantages to this project:

1. It sought to look at the consequences of three intact schools trying out three general methods.

2. It utilized both cognitive and affective measures in a repeated measures design to determine a longitudinal effect on children.

3. It provided for both in-service training and mid-service corrections in development.

On the contrary, there are some limitations as well:

1. The nature of the specific treatments used is not clear. From the point of view of precision in replication, the generalized approach may not meet the specificity often required for making a clearly defined set of prescriptions for other schools.

2. It is not known to what extent groups of teachers met for specific problem-solving sessions in which the assessment data collected was used as a basis for building individual or group curriculum strategies.

So, as is often the case, the evaluation of this project must be viewed with qualifications. The organization, assessment methods, and generalized design had many pluses. On the other hand, the specificity of treatment was not indicated to the evaluators in any detail, and perhaps it could not be so indicated. Given the general design and implementation of comparable research-treatment efforts, this study has much more intactness and potential for a contribution to educational design than many others.

The Questions

Mr. Scott has asked a number of questions in the introductory chapter. Some of these questions cannot be answered directly by the data and techniques

available to the evaluators. Others can be answered indirectly if certain qualifications are understood. This effort will limit itself to a response on the following questions:

1. What are the critical factors most necessary to facilitate academic success (wherein that success is defined in terms of achievement test scores)? Note that this is a severe limitation on the denotation of academic success, but it is a functional one for this study.

2. What are the relationships of cognitive development to affective development and vice versa?

3. How do cognitive-affective interactions differ by socio-economic class and school setting ?

4.. How effective in general was the effort of West Vigo in terms of cognitive achievement and social-interaction variables.

5. What longitudinal characteristics exist when individuals are tracked over a period of three years ?

6. What was the reaction of participating teachers to the program ?

Format

Chapter 3 will provide an overview of studies completed for the Vigo County School Corporation in 1972 and 1973. A summary of the previous studies will be made and an extension of some of the first year findings. Chapter 4 will review the results of the three year period extending from the initial testing in 1972 until the final testing in the spring of 1975. Chapter 5 will review teacher evaluations of the project and summarize the conclusions of the total study.

Limitations

Aside from those limitations already mentioned, the evaluation effort of this study will concentrate on results obtained from various achievement tests administered at various times and to various groups within the three year span, the relationship of these achievement tests to social-affective dimensions included in the Barclay Classroom Climate Inventory, and the Barclay Learning Needs Inventory. The major focus in terms of subjects will be the third graders who were initially tested in 1972 and last tested when they were fifth graders, and the initial fifth graders who were tested in 1972 and re-tested as seventh graders.

Because of changes in students, moves and additions, the sample narrows in the overall longitudinal studies. No further discussion will be made of the treatments since they are known to the evaluators only through the newsletters of the project and the description by the project director. It is our understanding that the major treatment thrust was focused on West Vigo Elementary School, but that the other two school represented two other approaches. We do not consider the three approaches as totally distinct and different, but rather as variations of teaching-learning that include many common elements. We also believe that both socioeconomic and architectural variables may have played a role in the total effect of treatments.

Finally, because the evaluators are dealing with this subject without any personal contact with the schools and efforts - except as voiced by the director in several meetings - we have the advantage of objectivity, and the disadvantage of not knowing the situation through personal experience.

CHAPTER 3

A SUMMARY OF PREVIOUS RESEARCH COMPLETED

In 1972 and 1973 two other reports were made regarding the Terre Haute Project. It is relevant prior to beginning the most recent analysis to discuss these two reports in summary fashion. The 1972 report was designed to describe the characteristics of groups within the Vigo County School District tested in the fall of 1972 on the Barclay Classroom Climate Inventory. Over 1300 third through sixth graders were tested in three different schools (Barclay, 1972). Although a number of achievement tests were administered at the same time , the major questions addressed in the research were:

> What are the characteristics in social-affective areas by grade levels ?
>
> What differences exist between the various grades at Rio Grande, Dixie Bee and West Vigo?

The 1973 report (Barclay, 1973) was concerned with the progress that had been made over the first year of the project. This report asked the questions:

> What evidence of change or growth had taken place in terms of social-affective trends ?
>
> What evidence of change or growth had taken place in terms of standardized achievement tests ?

These two studies shall be reported in summary fashion at this point to provide readers with an understanding of the research that has been done prior to the final evaluation extending over a three year period. They are integral parts of the entire project.

The 1972 Study

The 1972 study was basically concerned with an evaluation of the social-affective characteristics of the three schools. The Barclay Classroom Climate Inventory was used as a needs assessment device. This instrument is a unique one in that it taps self, peer and teacher judgments, integrates them via computer processing and indicates to the school the frequency of problems that may be suspected in each of eight problem areas: (1) self-concept, (2) group interaction deficits, (3) self-control or self-management problems, (4) verbal skill deficits, (5) physical skills, (6) vocational and career awareness development, (7) cognitive-motivation, and (8) attitude towards school.[1]

---

[1] The fact that the BCCI is used here as a substantive measure requires some further information. The BCCI is a system for evaluating a matrix of classroom expectations. It is appropriate to elementary school pupils from the third through the sixth grades and has been administered to nearly 40,000 children in twenty-five states from its introduction on the market in 1971. It is more than an inventory; it is an analysis of individual differences keyed to a group context. Indeed, it is a method of obtaining simultaneously self-report, peer support, and teacher expectation data designed to provide relevant feedback to local school personnel for the express purpose of mobilizing local resources in the designing of learning interventions related to the enhancing of the naturalistic rate of affective-social skill development. Its unique features are: (1) an attempt to cross-validate or at least compare self-report data with peer and teacher support systems, (2) an attempt to functionally analyze the impact not only of certain presumably invariant personality-intelligence factors that represent most simplistically the basic structure of human behavior, but to relate these factors to process-environmental support influences, and (3) to attempt to communicate these relationships through the logic of computer analysis and naturalistic language.

In its most general sense, the BCCI represents an integrative theory of individual differences. Implicit in the system is the assumption that environmental influences shape and mold hereditary predispositions. Factor analysis has been chosen as the most potent method of arriving at a scientific theory of individual differences. But there are some distinct differences in this approach. Typically existing efforts to identify second, third, and even fourth level factors have been based on self-report data alone, and the assumptions of linear relationships. Following a view to the contrary and later supported by other evidence (53) the author has believed that the weaknesses of the Thurstone and Guiford models have been in their inability to integrate process or environmental variables into the factor profile or lattice framework. In part, this is because they have overlooked a naturalistic method of arriving at the environmental inputs, i.e., peer and teacher expectations. Moreover, by integrating the peer and teacher expectation inputs, the mighty force of social reinforcement, and cultural shping mechanisms gains access to the factor scores. For it is most probable that social reinforcement paradigms provide the environmental input that shapes the hereditary transmission into the operational skill development and values characteristic of different cultures. For example, in a rural and primitive culture fishing and hunting skills may be elicited and primary spatial relations skills

1(continued)

may be accelerated from the second order psychomotor and speed factors. In an urban culture reinforcement expectations and methods may accelerate verbal and numerical skill development. Thus, behavioral reinforcement methods may provide the differential key to selective primary skill development.

Through multi-method, multi-trait factor analysis (52) , it is possible to integrate: (1) basic phenomenological self-report data (with all its internalistic dimensions, but based on the assumption of isomorphism i.e. that mental phenomena are possessive of an intrinsic unity, are simultaneous, and are intentionalistic), (2) certain invariant replicated factors that represent an hereditary transmission as established by many other investigations (54), and (3) behavioral inputs drawn from peer and teachers that represent most typically the entire repertory of cultural reinforcement.

A number of studies have been done with the BCCI. The earliest development related to sociometric studies done by the author and L.K. Barclay (1, 2, 3, 4, 5). These studies were the forerunners of the present development and related to efforts to determine what were the covariates of popularity and lack of popularity as defined by peer support. One of them (2) was a longitudinal study in which lack of peer and teacher support provided an index of potential dropouts from school. A study by Davis provided another index of predictive power of sociometrics utilizing an original sample tested by the author (6) Recognizing, then, the need to look at other inputs simultaneously, the immediate forerunner of the BCCI was designed and tried out. Forsyth and Jackson completed this study (7) and the data analysis and outcomes were reported by Barclay (8). Other efforts were then designed relating to the identification of reticent children and efforts to intervene in the classroom climate (9, 10, 11). Kennedy provided another predictive study in 1969 (12).

On the basis of these preliminary studies the format of the BCCI was established in 1967 and the rationale and development of the instrument detailed (13, 14, 15, 16, 17). Tapp (19) and Tapp and Barclay (43) explored the convergent and discriminant validity of the system finding that it provided ample convergent validity and relatively good discriminant validity. Church (20) , Stilwell, Brown and Barclay (30) , Jones, Blaney and King (48), and Rutledge (50) have utilized the BCCI as a vehicle of measuring change in selected experimental groups. Both Jones and Rutledge found that small group counseling strategies could be employed to effect change in reticent and shy children.

Differences between groups and cross-sectional trends utilizing BCCI problem area indices and factor scores were reported by Barclay (35) indicating that the instrument could be used to make needs assessment comparisons both within a school district and between school districts. The use of the instrument as a needs assessment device in the social-affective areas has been detailed also (33, 34).

Application of the BCCI to school districts has occurred in a three year long program in the Elyria Schools where teams of teachers, counselors and principals have worked to develop affective-social skills in children (55). Brown (56) in a doctoral study at Kent State University found that children who have been in emotionally disturbed classrooms and then transferred back to regular classrooms cause problems in the total classroom environment. Kehle and Guidubaldi (57) in a study for the Mentor coordination unit of the State of Ohio determined that the social and affective well-being of children in EMR classes was better in self-contained classes and classes using resource centers than in the regular mainstreaming classroom. This was completed with over 75 classrooms distributed throughout Ohio.

1(continued)

Most recently, Wu-Tien Wu (51) completed a Ph.D. dissertation in which he translated the BCCI into Chinese, administered it to nearly 500 Chinese children in Taiwan, and compared results with an American sample. Utilizing independent criteria of validity and other measure of locus of control , he has established the cross-cultural validity of the instrument providing interesting proof of the method of cultural reinforcement of individual differences.

The BCCI is available in two formats: (1) a comprehensive report for teachers, consultants and children, and (2) an abbreviated report for large surveys of children . In the latter format a Professional Consultant's Handbook is used that provides reports for zeroxing should this be desired. An early childhood format for preschool children is also available and an extension of the BCCI entitled the Learning Needs Inventory is available for junior-high, senior-high, and college level students.

Further information about the system or copies of research reports are available from Educational Skills Development Inc., 179 E. Maxwell St., Lexington, Kentucky, 40508.

Method

Forty-six classrooms were tested in the Vigo County School Corporation District during the fall of 1972. These classrooms were located in three schools: Rio Grande, Dixie Bee and West Vigo. There were 13 third grades, 13 fourth grades, 13 fifth grades and 7 sixth grades. From each classroom printout there is a table summarizing the proportion of problems in each of eight target suspected problem areas. These proportions of problems were analyzed separately for males and females using a multiple discriminant analysis program. Two such analyses were completed. One looked at the differences between grade levels and the other at the differences between schools by grade level.

Results

A summary of the results obtained overall for boys is as follows:

1. The mean frequency of self-concept problems was related significantly to the mean frequency of group problems in a negative correlation - signifying that the higher the proportion of self-concept problems, the lower the group problems. Thus, if a boy does not feel he very competent he tends to avoid getting into group problems.

2. Self control problems for boys were positively related to verbal problems and negative teacher ratings.

A summary of the results obtained overall for girls is as follows:

1. Self-concept problems for girls are significantly related to group interaction problems, physical energy skill deficits, cognitive motivation deficits and poort attitude towards school.

2. The frequency of problems for girls in most categories was directly related to the number of negative adjectives chosen by teachers for them.

Though a number of school and grade contrasts were made, for the entire population tested it appeared that the West Vigo Schools had a higher proportion of suspected problems in the areas of self-concept, group interaction, and attitude towards school than the original normative population of 146 classrooms used as the criterion. Of the three schools, West Vigo had a consistently higher proportion of problems in self-concept,

verbal and self-control areas. Particularly was this noted at the third grade level.

The recommendation at the end of the report suggested:" Since teacher attitude and expectations appear to be a major source of variance explaining fluctuations in problems, it might be wise to look at those grade levels where the mean teacher rating is considerably below or below average."(p.20)

The 1973 Study

The purpose of the 1973 report was to assess the changes that might have occurred during the first year of the program. The focus was on third, fourth and sixth graders of the 1972-73 school year. There were 302 third graders, and 530 fourth and sixth graders included in this study.

Method

Multivariate procedures were used to determine differences that might have occurred as a result of treatments associated with West Vigo or the other two schools. The multivariate analysis included the following category contrasts and comparisons: differences between the three schools; differences between the sexes; differences between socioeconomic groups , and the interactive effects of each of these comparison contrasts. In addition, step-wise regressions were also run with BCCI pre-test variables as predictors against posttesting achievement.

The socioeconomic groupings were determined chiefly by paternal occupation and level of presumed education obtained by the father. There were four groupings : SES 1 representing professional, scientific and business management groupings that presumed college or graduate work, SES 2 including sales, service and clerical workers that ordinarily require a college background,

SES 3 skilled services requiring a high school or technical school education, and SES 4 outdoor, agricultural and unskilled labor that might assume a high school education but not the necessary completion of high school.

Results

We shall summarize the results obtained under three headings. Multivariate analyses of achievement relating pre-achievement to post achievement, multivariate analyses of achievement utilizing pre-test BCCI scores, and differential prediction of achievement from pre-test BCCI scores by SES groupings.

With regard to the multivariate analyses of achievement, it was only possible to look at the third grade sample because incomplete pre-test ITBS scores were available. Table 1 indicates the pre and posttest means on the Nelson Reading Test administered at the beginning and at the end of the 1972-73 school year.

Table 1

Pre and Posttest Means on Nelson Reading Test

Variable	West Vigo	Rio Grande	Dixie Bee	
Paragraph	13.74	18.93	21.94	(Pre-test)
Vocabulary	13.91	16.14	19.41	
Paragraph	19.59	24.48	30.07	(Posttest)
Vocabulary	20.56	20.06	24.55	

N =302 Third Graders

A multivariate F ratio was obtained between a contrast of the third graders at West Vigo against the combined means of Rio Grande and Dixie Bee

that was significant at the .001 level. This analysis was based on the multivariate analysis of posttest scores covarying the pre-test scores. However, though there are significant differences on the pre-test between the schools on both reading variables, the significant difference in vocabulary does not continue to exist (statistically that is) for the comparison between West Vigo and the mean of the two other schools. In short, West Vigo at the end of the first year differed from the other two schools primarily in its ability at paragraph usage. It is possible then to infer that West Vigo was able to erase initial differences in vocabulary by the end of the first year, but not to extend these gains to paragraph usage.

In the second set of analyses the pre-test BCCI data as well as achievement scores were covaried against the posttesting BCCI and achievement scores.

The complexity of these analyses make it imperative to summarize the main findings. They are as follows:

1. In general pre-test achievement variables are the strongest predictors of post-achievement scores.

2. In general pre-BCCI scores predict strongly post-BCCI scores. Thus across schools, what a child is and has done is the strongest predictor of what he will be and will do.

3. With regard to West Vigo(as compared with the means of Rio Grande and Dixie Bee) teacher ratings tended to remain quite negative, but children tended to become less verbally reticent and to become less interested in outdoor mechanical interests.

4. Contrasting the same set of results for Rio Grande and Dixie Bee, though there is a decrease in negative teacher evaluations here, this appears to be accompanied by a significant increase in verbal reticence and shyness.

The interpretation of such complex data analyses is difficult at best, and only the high points have been touched here. But insorfar as the main effects and interactions are observable from the data it would appear

that combined with the achievement gains at Rio Grande and Dixie Bee is a gradual development of more verbal reticence with concurrent positive teacher ratings. This may simply indicate that teachers do in point of fact like order in the classroom and order means restricting verbal output--at least in some cases. With regard to West Vigo, the gains in vocabulary are obviously there even after both pre and posttesting of the BCCI. Thus, it may well be that the philosophy and treatment at West Vigo instituted earlier in that year--and relating strongly to behavior modification techniques--did succeed in raising the vocabulary level in reading, but did not appear to improve overall the affective social-interaction climate.

Additional Studies on the 1972-1973 Data

When the 1973 report was made, the analyses to be reported here were done, but were not included in any substantive sense. As a consequence, the data to be reported here is new and will be reported not in summary form, but in its complete form.

The rest of this chapter will report the results of the BCCI as predictors of achievement criteria. In all instances, the BCCI predictors were utilized at the beginning of the first year and the achievement criteria were obtained at the end of the first year. The method used was step-wise regression and 20 BCCI scales were used as predictors.[2]

---

[2]The BCCI predictor variables were: (1) STOT, a measure of self-competency, (2) GAI, group artistic-intellectual peer nominations, (3) GRM, group realistic-outdoor nominations, (4) GSC, group social conventional peer nominations, (5) GE, group enterprising nominations, (6) GR, group reticent and shy nominations, (7) GD, group disruptive nominations, (8) TR+, teacher total positive adjectives chosen, (9) TR-, teacher total negative adjectives chosen, (10) INT, intellectual-scientific vocational interests, (11) REAL, realistic-outdoor vocational interests, (12) CNT, control, a measure derived from vocational occupations indicating interest in bold exciting occupations against safe and secure ones, (13) SSR, a reinforcer scale reflecting self-stimulating interests, (14) ESR, esthetic reinforcers, (15) ITR, intellectual task-oriented reinforcers, (16) FRR, family reinforcers, (17) CNV, conventional reinforcers, (18) PRM, peer male reinforcers, (19) PRF, peer female reinforcers, (20) CCI, attitude towards the classroom.

Overall Prediction of Achievement

Tables 2 and 3 report the results of the step-wise regressions for third grade males using the Nelson Reading Vocabulary and Paragraph Meaning scores as the dependent variables. The multiple correlation for pre-test BCCI variables with vocabulary is .69 accounting for 47% of the total variance. For paragraph meaning, the multiple correlation is .61 with 37% of the variance accounted for. These step-wise regressions indicate that teacher expectations and group nominations in the artistic-intellectual and enterprising dimensions are both predictors of achievement.

Tables 4 and 5 report similar results for the third grade females. It should be noted, however, that group artistic-intellectual nominations are more predictive of achievement for girls than teacher positive adjectives. The multiple correlation for vocabulary is .65 with 42% of the variance accounted for. The multiple correlation for Paragraph Meaning is .59 with 35% of the variance accounted for. Thus, for both boys and girls, teacher expectations and group nominations are highly predictive of scores on the Nelson Reading Vocabulary and Paragraph Meaning scores.

Tables 6-8 report the results of step-wise regressions using the Vocabulary, Reading, and Mathematics scores of the ITBS as criteria. Vocabulary is predicted by positive teacher expectations, group enterprising nominations, control, intellectual interests, and lack of group disruptive nominations. The multiple correlation is .42 and the total variance accounted for approximately 19%. Reading is predicted again by the same variables plus self-competency and interest in peer female reinforcers. The multiple correlation is .51 and 27% of the variance is accounted for. In Mathematics, not only are positive teacher nominations inportant, but the lack of negative teacher expectations and absence of group disruptive nominations play an important role in the prediction of mathematics achievement. The multiple correlation is .47 and 22% of the variance is accounted for.

For the prediction of female achievement on the ITBS, tables 9-11 report these results. Girls' vocabulary achievement is predicted by a combination of group artistic-intellectual nominations, the absence of negative teacher judgments, self-competency, and good attitude towards school. Total multiple correlation is .47 with 23% of the variance accounted for. For reading achievement, the same variables are present with the exception that peer male reinforcers and family reinforcers enter as predictors in substitute for self-competency and attitude towards school. The multiple correlation here is .51 with 27% of the variance accounted for. Finally, in the prediction of ITBS mathematics scores, it is interesting to note that not only do positive teacher expectations predict, but negative ones must be avoided. In addition, group realistic-outdoor and masculine nominations are predictive of mathematics achievement plus peer female and esthetic reinforcers. The multiple correlation is .54 and 30% of the variance is accounted for.

In summary, we may observe that teacher expectations, group nominations, and various reinforcers are predictive of vocabulary, reading, and mathematics achievement. Multiple correlations range from .47 to .69 and from 19% to 47% of the variance is accounted for by BCCI predictors.

SES and Differential Prediction of Achievement

In this section we shall report the results of analyses of BCCI predictors by SES against achievement variables. Table 12 summarizes individual predictor-achievement correlations. In this table the means of each of the SES groups are reported by some of the most important predictor variables. Combinations of male and female grouping by upper and lower socioeconomic groups are also reported. Some observations are in order relating to this table.

1. Both positive and negative ratings are highly predictive of academic achievement.

2. Though group artistic-intellectual nominations are predictive of achievement for all SES groups, they are most predictive for upper class males and least predictive of lower class males on the Nelson Reading Test scores.

3. Group realistic-outdoor masculine nominations are most predictive of upper class males and lower class females on the Nelson Reading Test scores.

4. Group social and enterprising nominations are most predictive of upper class males on the Nelson Test scores.

5. Disruptive nominations are generally negatively predictive of achievement for all groups. Reticent nominations are likewise negative except for upper class males and females where there are slightly positive nominations.

6. Self-competency scores are generally non-significant in their prediction, except for lower class females on the ITBS vocabulary and reading portions.

7. Control shows as a positive predictor for upper class males on the Nelson Test, and as a negative predictor for females on the Iowa Vocabulary.

8. Both Nelson and ITBS scores show significant trends by SES.

Tables 13-32 provide specific step-wise regressions for upper and lower SES groupings on the two sets of achievement variables. These tables provide some interesting specific information about the prediction of achievement by SES group. Rather than discuss each of these tables separately, the following points will summarize some of the interesting findings.

1. For upper SES third grade males, Group Social Convention Nominations and Control are both highly predictive of achievement.

2. For lower SES third grade males, both positive teacher ratings and the absence of negative teacher ratings are predictors of achievement. Group nominations do not enter the regression equation.

3. Upper SES third grade females need not only to obtain positive teacher expectations, but avoid negative teacher judgments, and disruptive group nominations.

4. Lower SES third grade females need to avoid teacher negative expectations and obtain group social conventional nominations.

5. For upper SES fourth and sixth grade males, group enterprising and positive teacher expectations are generally predictive of achievement. This suggests that leadership activity is expected and predictive of achievement for this group.

6. Though group enterprising nominations play a role in the prediction of achievement for lower SES fourth and sixth grade males, generally the avoidance of negataive teacher ratings is a higher order predictor.

7. Group realistic-outdoor nominations prove to be the first predictor for two of the three regressions for upper socioeconomic class females on the ITBS.

8. Group realistic-outdoor nominations plus the avoidance of negative teacher expectations and disruptive nominations play a predictive role in achievement for lower SES fourth and sixth grade females.

9. Overall, using the posttesting achievement scores and posttesting BCCI scores as the dependent variables, and the pretest achievement and BCCI variables as the covariates, 23% of the posttesting variance for third graders is accounted for by 11 pretesting BCCI variables.

10. Different combinations of variables are predictive for boys than for girls ($F=2.71$ P at .0002).

11. Different combinations of variables are predictive for lower middle class children (SES Group 3 $F=1.63$ P at .04) and lower class children (SES Group 4 $F=1.68$ P at .03).

In summary, then, it is apparent that there are some differential predictors for achievement that are related to sex and SES. Social nominations and a sense of control are important for upper class males on the Nelson scores. Group enterprising and positive teacher expectations predict achievement on the ITBS for the same SES groups. For lower class males and females, the absence or avoidance of negative teacher ratings plays the most important role in prediction of achievement. Finally, upper class females' achievement seems to be predicted by the frequency of group outdoor-masculine nominations as well as favorable teacher expectations.

Conclusion

This chapter has reviewed the first year's status of the project. It was evident at that point that the three schools were: (1) representing different styles of teaching and interacting with children, (2) manifested some real differences in SES composition with West Vigo having more lower socioeconomic class children, (3) demonstrating the existence of differential social-affective climates with somewhat differing expectations for conformity, creativity, and sex-role expectations, and (4) showing some differential gains in achievement level--particularly in Reading Vocabulary in favor of the greater effort being made by the West Vigo school.

The following recommendation was stated in the 1973 report:

> "It would appear to the writer without a specific knowledge of the treatments that have been used in the Vigo School Corporation efforts, that interim progress towards the goals of the project has been met. The evidence with regard to achievement at West Vigo is very clear. But with a recognition of the important role that teacher expectations and peer relationships play in learning, it is also apparent that some effort ought to be made to increase these mediating circumstances. It may well be that the school effort should include curriculum procedures designed to increase self-competency and self-esteem and in-service training to aid teachers to increase their expectations and reinforcements --particularly for boys who are in lower or middle socio-economic classifications." (p. 25)

Table 2

Step-wise Regression for Male Students
with Nelson Reading Vocabulary Score
as Dependent Variable & Pre-test BCCI Scores
as Independent Variables

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.577	.57	.333	76.09	.01
2.	GAI	.464	.62	.394	15.25	.01
3.	GE	.375	.64	.412	4.64	.05
4.	GD	.195	.66	.444	8.43	.01
5.	ITR	.300	.67	.456	3.36	--
6.	TR-	-.450	.69	.470	3.90	--

N = 154 3rd Grade Males

Table 3

Step-wise Regression for Male Students
with Nelson Reading Paragraph Score
as Dependent Variable & Pre-test BCCI Scores
as Independent Variables

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.481	.48	.232	45.96	.01
2.	GE	.354	.53	.290	12.51	.01
3.	GD	-.220	.58	.345	12.46	.01
4.	ITR	.256	.59	.355	2.25	--
5.	STOT	.087	.61	.370	3.59	--

N = 154 3rd Grade Males

Table 4

Step-wise Regression for Female Students
with Nelson Reading Paragraph Meaning Score
as Dependent Variable & Pre-test BCCI Scores
as Independent Variables

Step No.	Variable Entered	Simple R	Multiple R	R^2	F	P
1.	GAI	.47	.47	.226	42.65	.01
2.	TR+	.37	.51	.265	7.85	.01
3.	CCI	-.05	.55	.300	7.20	.01
4.	GSC	.30	.56	.322	4.64	.05
5.	ESR	.12	.57	.332	2.10	--
6.	STOT	-.02	.59	.358	5.68	.05

N = 148 3rd Grade Females

Table 5

Step-wise Regression for Female Students
with Nelson Reading Vocabulary Score
as Dependent Variable & Pre-test BCCI Scores
as Independent Variables

Step No.	Variable Entered	Simple R	Multiple R	R^2	F	P
1.	GAI	.52	.52	.271	54.44	.01
2.	TR+	.46	.58	.344	16.03	.01
3.	STOT	.04	.61	.375	7.34	.01
4.	GSC	.36	.62	.388	3.03	--
5.	REAL	.20	.63	.402	3.29	--
6.	INT	.12	.64	.419	4.07	.05
7.	CCI	-.17	.65	.428	2.11	--

N = 148 3rd Grade Females

Table 6

Step-wise Regression for Male Students with Iowa Vocabulary Score as Dependent Variable & BCCI Scores as Independent Variables

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.317	.31	.100	31.27	.01
2.	GE	.284	.37	.145	14.67	.01
3.	CNT	.192	.38	.158	4.22	.05
4.	INT	.062	.41	.178	6.57	.05
5.	GD	-.039	.42	.188	3.29	---

N=281 4th and 6th Grade Males

Table 7

Step-wise Regression for Male Students with Iowa Reading Score as Dependent Variable & BCCI Scores as Independent Variables

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.392	.39	.154	50.92	.01
2.	GE	.303	.43	.199	15.71	.01
3.	CNT	.238	.47	.220	7.48	.01
4.	INT	.033	.48	.235	5.42	.05
5.	GD	-.058	.49	.248	4.62	.05
6.	STOT	.151	.50	.254	2.33	---
7.	PRF	.091	.51	.269	5.54	.05

N=281 4th and 6th Grade Males

Table 8

Step-wise Regression for Male Students with Iowa Mathematics Score as Dependent Variable and BCCI Scores as Independent Variables

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.356	.35	.127	40.67	.01
2.	TR-	-.331	.38	.150	7.72	.01
3.	GD	-.172	.40	.162	3.87	.05
4.	GE	.176	.42	.188	8.70	.01
5.	PRF	.134	.45	.200	4.37	.05
6.	STOT	.046	.47	.220	6.75	.01

N=281 4th and 6th Grade Males

Table 9

Step-wise Regression for Female Students with Iowa Vocabulary Score as Dependent Variable and BCCI Scores as Independent Variables

Step. No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GAI	.372	.37	.138	39.50	.01
2.	TR-	-.321	.44	.195	17.23	.01
3.	STOT	.202	.46	.214	5.88	.05
4.	CCI	.119	.47	.226	3.62	---

N=247 4th and 6th Grade Females

Table 10

Step-wise Regression for Female Students
with Iowa Reading Score as Dependent Variable
and BCCI Scores as Independent Variables

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GAI	.428	.42	.183	55.09	.01
2.	TR-	-.322	.48	.234	16.18	.01
3.	PRM	.192	.50	.259	8.38	.01
4.	FRR	.148	.51	.268	2.99	.--

N=247 4th and 6th Grade Females

Table 11

Step-wise Regression for Female Students
with Iowa Mathematics Scores as Dependent Variable
and BCCI Scores as Independent Variables

Step No	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.424	.41	.179	53.72	.01
2.	GRM	.381	.48	.245	21.21	.01
3.	TR-	-.388	.52	.276	10.56	.01
4.	PRF	.395	.53	.284	2.61	--
5.	ESR	.242	.54	.295	3.65	--

N=247 4th and 6th Grade Females

Selected Pre-Test BCCI Predictor Correlations with Post-testing Achievement Scores

Predictor Variable	N	Grade Level	SES Group Mean	Specific Sex Group Combinations		Criterion Correlations: Nelson Voc.	Nelson Para	Iowa Voc.	Iowa Read.	Iowa Math
TR+	298	3rd	GM 12.71			.47	.39			
	75		(1) 14.53	(1) + (2)	M	.41	.44			
	58		(2) 16.81	(1) + (2)	F	.43	.41			
	86		(3) 14.06	(3) + (4)	M	.54	.40			
	79		(4) 10.66	(3) + (4)	F	.43	.38			
	494	4&6	GM 12.65					.21	.26	.31
	127		(1) 17.77	(1) + (2)	M			.21	.30	.32
	78		(2) 15.74	(1) + (2)	F			.23	.24	.41
	146		(3) 12.10	(3) + (4)	M			.26	.31	.29
	143		(4) 8.57	(3) + (4)	F			.23	.22	.33
TR-	298	3rd	GM 7.15			-.45	-.36			
	75		(1) 5.17	(1) + (2)	M	-.40	-.28			
	58		(2) 4.23	(1) + (2)	F	-.47	-.39			
	86		(3) 6.29	(3) + (4)	M	-.49	-.36			
	79		(4) 8.01	(3) + (4)	F	-.43	-.34			
	494	4&6	GM 6.23					-.27	-.28	-.37
	127		(1) 3.47	(1) + (2)	M			-.16	-.24	-.32
	78		(2) 4.00	(1) + (2)	F			-.16	-.21	-.29
	146		(3) 6.38	(3) + (4)	M			-.27	-.23	-.30
	143		(4) 7.84	(3) + (4)	F			-.29	-.23	-.42
GAI	298	3rd	GM 4.35			.37	.33			
	75		(1) 5.89	(1) + (2)	M	.55	.50			
	58		(2) 4.37	(1) + (2)	F	.33	.31			
	86		(3) 3.75	(3) + (4)	M	.24	.17			
	79		(4) 2.55	(3) + (4)	F	.41	.38			
	494	4&6	GM 3.87					.28	.30	.24
	127		(1) 6.98	(1) + (2)	M			.21	.27	.15
	78		(2) 4.31	(1) + (2)	F			.34	.35	.24
	146		(3) 3.52	(3) + (4)	M			.27	.24	.25
	143		(4) 2.47	(3) + (4)	F			.34	.40	.39

Table 12 (continued)

Predictor Variable	N	Grade Level	SES Group Mean		Specific Sex Group Combinations		Criterion Correlations: Nelson Voc.	Nelson Para.	Iowa Voc.	Iowa Read	Iowa Math
GRM	298	3rd	GM	4.06			.34	.24			
	75		(1)	5.08	(1) + (2)	M	.46	.29			
	58		(2)	4.30	(1) + (2)	F	.01	-.04			
	86		(3)	3.48	(3) + (4)	M	.29	.18			
	79		(4)	3.24	(3) + (4)	F	.36	.37			
	494	4&6	GM	3.64					.22	.24	.19
	127		(1)	5.48	(1) + (2)	M			.15	.20	.18
	78		(2)	4.66	(1) + (2)	F			.31	.29	.26
	146		(3)	3.53	(3) + (4)	M			.20	.19	.10
	143		(4)	2.65	(3) + (4)	F			.26	.29	.31
GSC	298	3rd	GM	5.95			.38	.34			
	75		(1)	7.90	(1) + (2)	M	.52	.50			
	58		(2)	6.45	(1) + (2)	F	.34	.32			
	86		(3)	6.02	(3) + (4)	M	.28	.18			
	79		(4)	4.21	(3) + (4)	F	.39	.38			
	494	4&6	GM	5.74					.22	.26	.24
	127		(1)	9.17	(1) + (2)	M			.15	.22	.22
	78		(2)	7.05	(1) + (2)	F			.20	.25	.26
	146		(3)	5.16	(3) + (4)	M			.26	.26	.23
	143		(4)	4.34	(3) + (4)	F			.24	.29	.29
GE	298	3rd	GM	5.41			.21	.13			
	75		(1)	6.51	(1) + (2)	M	.42	.36			
	58		(2)	6.38	(1) + (2)	F	.13	.03			
	86		(3)	5.16	(3) + (4)	M	.02	-.05			
	79		(4)	5.02	(3) + (4)	F	.10	.07			
	494	4&6	GM	5.43					.20	.25	.16
	127		(1)	7.43	(1) + (2)	M			.28	.39	.33
	78		(2)	4.80	(1) + (2)	F			.21	.26	.02
	146		(3)	5.83	(3) + (4)	M			.20	.23	.20
	143		(4)	3.39	(3) + (4)	F			.21	.21	.25

Table 12 (continued)

Predictor Variable	N	Grade Level	SES Group Mean	Specific Sex Group Combinations		Criterion Correlations: Nelson Voc.	Nelson Para.	Iowa Voc.	Iowa Read	Iowa Math
CCI	298	3rd	GM 9.66			.06	.06			
	75		(1) 9.67	(1) + (2)	M	.07	.14			
	58		(2) 10.34	(1) + (2)	F	.03	.02			
	86		(3) 9.35	(3) + (4)	M	-.04	-.01			
	79		(4) 9.59	(3) + (4)	F	.10	-.01			
	498	4th&6th	GM 9.52					.06	.09	.03
	127		(1) 10.35	(1) + (2)	M			.05	.14	.06
	78		(2) 9.67	(1) + (2)	F			.05	.07	-.11
	146		(3) 9.57	(3) + (4)	M			.03	.01	-.02
	143		(4) 9.52	(3) + (4)	F			.06	.10	.06
CNT	298	3rd	GM 4,97			.03	-.01			
	75		(1) 5.29	(1) + (2)	M	.28	.17			
	58		(2) 4.39	(1) + (2)	F	.05	-.04			
	86		(3) 4.75	(3) + (4)	M	-.11	-.08			
	79		(4) 5.13	(3) + (4)	F	.07	.11			
	498	4th&6th	GM 5.16					.01	.02	.03
	127		(1) 5.70	(1) + (2)	M			.10	.12	.15
	78		(2) 4.96	(1) + (2)	F			-.22	-.17	-.03
	146		(3) 5.35	(3) + (4)	M			.08	.10	.07
	143		(4) 5.09	(3) + (4)	F			.06	.05	.07
NELSON READING PRE										
	298	3rd	GM 25.91			.80	.71			
	75		(1) 29.59							
	58		(2) 26.09							
	86		(3) 23.44							
	79		(4) 22.00							
I.T.E.D. Post	498	4th&6th	GM					53.58	50.94	47.53
	127		(1)					61.73	60.25	54.41
	78		(2)					56.04	52.26	49.93
	146		(3)					49.29	47.95	45.73
	143		(4)					49.55	47.78	43.47

Predictor Variable	N	Grade Level	SES Group Mean	Specific Sex Group Combinations		Criterion Correlations: Nelson Voc.	Nelson Para.	Iowa Voc.	Iowa Read	Iowa Math
G.D.	298	3rd	GM 2.78			-.17	-.13			
	75		(1) 1.82	(1) + (2)	M	-.13	-.16			
	58		(2) 3.16	(1) + (2)	F	-.24	-.21			
	86		(3) 2.56	(3) + (4)	M	-.25	-.16			
	79		(4) 2.97	(3) + (4)	F	-.11	-.10			
	494	4th&6th	GM 2.83					-.03	-.03	-.12
	127		(1) 1.59	(1) + (2)	M			.04	.06	-.03
	78		(2) 2.01	(1) + (2)	F			-.07	-.05	-.15
	146		(3) 2.89	(3) + (4)	M			-.08	-.04	-.08
	143		(4) 2.88	(3) + (4)	F			-.07	-.17	-.15
G.R.	298	3rd	GM 2.90			-.06	-.05			
	75		(1) 2.33	(1) + (2)	M	.02	-.03			
	58		(2) 2.76	(1) + (2)	F	.10	.09			
	86		(3) 3.22	(3) + (4)	M	-.24	-.27			
	79		(4) 2.47	(3) + (4)	F	-.09	-.06			
	494	4th&6th	GM 2.90					-.04	-.04	-.12
	127		(1) 2.28	(1) + (2)	M			-.01	-.01	-.13
	78		(2) 1.73	(1) + (2)	F			-.11	-.10	-.06
	146		(3) 3.02	(3) + (4)	M			-.12	-.08	-.12
	143		(4) 3.09	(3) + (4)	F			.02	-.03	-.12
STOT	298	3rd	GM 15.08			-.01	.01			
	75		(1) 15.14	(1) + (2)	M	-.03	.03			
	58		(2) 16.58	(1) + (2)	F	-.11	-.18			
	86		(3) 15.02	(3) + (4)	M	.01	.10			
	79		(4) 14.92	(3) + (4)	F	-.10	-.13			
	494	4th&6th	GM 14.49					.06	.05	.01
	127		(1) 15.45	(1) + (2)	M			.02	.05	.04
	78		(2) 14.82	(1) + (2)	F			.10	.12	.06
	146		(3) 14.53	(3) + (4)	M			-.03	.01	-.06
	143		(4) 14.43	(3) + (4)	F			.22	.17	.04

Table 13

Step-Wise Regression on Post-test
Nelson Reading Vocabulary Scores Using Pre-test
BCCI Variables for Third Grade Males in SES 1
& 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GSC	.52	.52	.27	24.01	.01
2.	CNT	.28	.57	.32	4.73	.05
3.	PRF	.26	.61	.37	5.32	.05
4.	TR+	.40	.65	.42	4.71	.05
5.	GE	.42	.69	.47	5.59	.05
6.	GR	.02	.71	.50	4.31	.05

Df=1&66

Table 14

Step-Wise Regression on Post-Test
Nelson Reading Paragraph Scores Using Pre-test
BCCI Variables for Third Grade Males in SES 1
& 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GSC	.50	.50	.24	21.12	.01
2.	TR+	.44	.54	.29	4.13	.05
3.	CNT	.17	.56	.32	2.53	.--
4.	GE	.36	.59	.35	2.96	.--
5.	GR	-.03	.63	.40	5.07	.05

Df= 1&66

Table 15

Step-Wise Regression on Post-Test
Nelson Reading Vocabulary Scores Using Pre-Test
BCCI Variables for Third Grade Males in SES 3
& 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.54	.54	.29	33.47	.01
2.	TR-	-.49	.57	.33	5.71	.05
3.	CNT	-.11	.61	.37	4.86	.05
4.	PRF	-.15	.62	.39	2.89	---

DF= 1&84

Table 16

Step-Wise Regression on Post-Test
Nelson Reading Paragraph Scores Using Pre-Test
BCCI Variables for Third Grade Males in SES 3
& 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.40	.40	.15	15.38	.01
2.	TR-	-.36	.42	.18	2.29	---
3.	CNT	-.08	.45	.20	2.03	---

Df= 1&84

Table 17

Step-Wise Regression on Post-Test
Nelson Reading Vocabulary Scores Using Pre-Test
BCCI Variables for Third Grade Females in SES
1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR-	-.47	.47	.22	17.96	.01
2.	GD	-.24	.50	.25	2.68	---
3.	GRM	.02	.53	.28	2.69	---

Df= 1 & 65

Table 18

Step-Wise Regression on Post-Test
Nelson Reading Paragraph Scores Using Pre-test
BCCI Variables for Third Grade Females in SES
1 &2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.41	.41	.17	12.85	.01
2.	TR-	-.39	.45	.20	2.61	---

Df= 1 & 65

Table 19

Step-Wise Regression on Post-test
Nelson Reading Vocabulary Scores Using Pre-test
BCCI Variables for Third Grade Females in SES
3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR-	-.43	.43	.18	18.02	.01
2.	GSC	.36	.49	.24	6.23	.05
3.	GR	-.08	.56	.31	7.88	.01

DF= 1 & 81

Table 20

Step-Wise Regression on Post-Test
Nelson Reading Paragraph Scores Using Pre-test
BCCI Variables for Third Grade Females in SES
3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.38	.38	.14	13.45	.01
2.	GRM	.37	.45	.20	5.58	.05
3.	GR	-.05	.50	.25	4.77	.05
4.	GSC	.07	.52	.27	2.87	---

DF= 1 & 81

Table 21

Step-Wise Regression on Post-Test Iowa Test of Vocabulary Scores Using Pre-Test BCCI Variables for Fourth & Sixth Grade Males in SES 1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GE	.28	.28	.08	9,14	.01
2.	TR+	.21	.30	.09	2.02	---

DF= 1 & 107

Table 22

Step-Wise Regression on Post-Test Iowa Test of Reading Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Males in SES 1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GE	.39	.39	.15	19.33	.01
2.	TR+	.30	.44	.19	4.65	.05
3.	PRF	.10	.46	.21	2.43	---

DF= 1 & 107

Table 23

Step-Wise Regression on Post-Test Iowa Test of Mathematics Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Males in SES 1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GE	.33	.33	.10	12.76	.01
2.	TR-	-.32	.42	.18	9.72	.01
3.	GR	-.13	.45	.20	2.98	---

DF= 1 & 107

Table 24

Step-Wise Regression on Post-Test Iowa Test of Vocabulary Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Males in SES 3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR-	-.27	.27	.07	11.85	.01
2.	GE	.20	.32	.10	5.82	.05
3.	GR	-.12	.36	.13	4.13	.05

DF= 1 & 154

Table 25

Step-Wise Regression on Post-Test Iowa Test of Reading Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Males in SES 3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1. T	TR+	.31	.31	.09	16.49	.01
2.	GE	.24	.36	.13	5.30	.05
3.	GR	-.08	.37	.14	2.55	---

DF= 1 & 154

Table 26

Step-Wise Regression on Post-Test Iowa Test of Mathematics Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Males in SES 3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR-	-.30	.30	.09	15.18	.01
2.	GE	.20	.35	.12	5.37	.05
3.	GR	-.12	.37	.14	3.79	---

DF= 1 & 154

Table 27

Step-Wise Regression on Post-Test Iowa Test of Vocabulary Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade females in SES 1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GRM	.31	.31	.09	10.08	.01
2.	CNT	-.22	.36	.13	3.99	.05
3.	TR+	.22	.39	.15	2.37	---

DF= 1 & 96

Table 28

Step-Wise Regression on Post-Test Iowa Test of Reading Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Females in SES 1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GRM	.29	.29	.08	8.80	.01
2.	TR+	.24	.33	.11	2.63	---

DF= 1 & 96

Table 29

Step-Wise Regression on Post-Test Iowa Test of Mathematics Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Females in SES 1 & 2 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR+	.41	.41	.16	18.62	.01
2.	CCI	.11	.45	.20	5.18	.05
3.	GRM	.26	.48	.23	2.89	---

DF= 1 & 96

Table 30

Step-Wise Regression on Post-Test Iowa Test of Vocabulary Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Females in SES 3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR-	-.29	.29	.08	11.92	.01
2.	GRM	.26	.35	.12	5.84	.05
3.	PRM	.22	.40	.16	6.14	.05
4.	CNT	.23	.41	.17	6.70	.05

DF= 1 & 135

Table 31

Step-Wise Regression on Post-Test Iowa Test of Reading Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Females in SES 3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	GRM	.29	.29	.08	12.52	.01
2.	PRM	.25	.37	.14	9.57	.01
3.	GD	-.17	.43	.19	7.16	.01
4.	TR+	.22	.44	.20	1.94	---

DF= 1 & 135

Table 32

Step-Wise Regression on Post-Test Iowa Test of Mathematics Scores Using Pre-Test BCCI Variables for Fourth and Sixth Grade Females in SES 3 & 4 Categories

Step No.	Variable	Simple r	Multiple r	r^2	F	P
1.	TR-	-.42	.42	.18	29.04	.01
2.	GRM	.31	.47	.22	7.86	.01
3.	CCI	.06	..49	.24	3.34	---

DF= 1 & 135

CHAPTER 4

THE THREE YEAR FOLLOW-UP STUDIES

From the previous chapter there was some evidence: (1) that West Vigo had succeeded in raising the vocabulary level of its students, (2) that differing characteristics of both peer and teacher expectations were predictive of achievement in the three schools, and (3) that socio-economic characteristics embedded in the very school populations was a specific mediating variable of both achievement progress and affective-social environments.

In this chapter we shall look at the same problems as in the previous chapter, but over the time space of three academic years.

Achievement

Two sets of studies were run on achievement. One was with the third grade of 1972 (now fifth grade) and the other was with the fourth grade of 1972 (now sixth grade). Since the 1972 fifth grade had moved on to another school setting as seventh graders it was not possible to include them in the achievement studies.

In these studies a sample of third and fourth graders (1972) on whom complete data were available was used. Multivariate analyses of variance with specific covariates from the initial testing were used.

Table 33

Sample Description for Three Year Follow Up

		West Vigo	Dixie Bee	Rio Grande
3rd then	Male	21	40	31
	Female	20	34	38
4th then	Male	12	15	16
	Female	20	14	12

Multivariate Analysis of Achievement Data

This results section deals solely with the differences in achievement which exist between the three schools analyzed separately across the two different grade and sex levels.

Fifth Grade (1975)

To determine differences between fifth graders, two basic sets of dependent variables were used. The first set contained the Vocabulary and Paragraph subtests from the Nelson Reading Test administered in the spring of 1975. The second set of variables contained the Vocabulary, Reading, and Arithmetic total subtests administered during the school year.

Nelson Reading Test Results (Males)

In order to control for initial differences between the three schools, initial Nelson Vocabulary Subtest scores (1973) were used in the analysis as a covariate. Tables 34 and 35 show the means and standard deviations for the 1973 and 1975 Nelson Reading scores (Vocabulary and Paragraph Meaning) for males and females respectively.

Table 34

Nelson Reading Scores (Males) 1973 and 1975 by School

School		1973 Voc.	1973 Para.	1975 Voc.	1975 Para.
West Vigo	$\bar{x}$	12.85	14.14	36.71	25.38
	S.D.	6.6	6.5	11.7	9.7
Rio Grande	$\bar{x}$	17.52	14.77	40.10	32.42
	S.D.	9.5	6.2	12.5	12.0
Dixie Bee	$\bar{x}$	19.95	18.95	42.20	33.20
	S.D.	9.5	6.5	13.0	11.3

The multivariate test of the hypothesis I using Nelson Reading Subtest Vocabulary and Paragraph meaning administered in 1975 as dependent variables and Nelson Vocabulary administered in 1973 as a covariate showed a non-significant difference (multivariate $F=1.5027$, $d.f.=2.87$, $p < .23$). In other words, although apparent differences exist when comparing the reading scores for West Vigo with the combined mean of Rio Grande and Dixie Bee, statistically speaking, these differences are not significant for the male fifth grade sample.

The second hypothesis shows a similar non-significant result (multivariate $F=.32$, $d.f.=2.87$, $p < .73$). This means that no significant difference exists between Nelson Reading tests for boys in Dixie Bee and Rio Grande.

Nelson Reading Test Results (Female)

Table 35 shows the results of the Nelson Reading Tests for females in the fifth grade.

Table 35

Nelson Reading Scores (Females) 1973 and 1975 by School

School		1973 Voc.	1973 Para.	1975 Voc.	1975 Para.
West Vigo	$\bar{x}$	17.35	16.69	38.00	30.60
	S.D.	6.6	6.5	11.6	9.7
Rio Grande	$\bar{x}$	20.39	16.87	44.53	36.39
	S.D.	9.6	6.2	13.0	11.3
Dixie Bee	$\bar{x}$	21.76	19.47	44.35	35.47
	S.D.	9.5	6.5	12.5	12.0

The multivariate F test for differences of mean vectors, while controlling for pre Nelson Vocabulary scores (1973) was nonsignificant (multivariate F=1.76, d.f.=2 and $p < .18$) for girls when comparing West Vigo with the combined mean of Rio Grande and Dixie Bee.

The test of hypothesis showed similar results to that of males. There was no significant difference (multivariate F-.59, d.f.=2.87 and $p < .56$) between girls' adjusted Reading Vocabulary and Paragraph scores for Dixie Bee and Rio Grande schools.

Iowa Test of Basic Skills (ITBS) Results (Males)

Three subtests of the ITBS administered in 1975 served as the dependent variables for this analysis. These included the Reading, the Vocabulary, and the Arithmetic Total Subtests. In order to control for initial difference between the groups, the Nelson Vocabulary Subtest administered in 1973 was used. Table 36 shows the differences between the three schools for males on the ITBS.

Table 36

Iowa Test of Basic Skills 1975 for Males Across Schools

School		1975 Voc.	1975 Read.	1975 Arith.
West Vigo	$\bar{x}$	39.57	37.57	42.14
	S.D.	10.4	12.2	8.1
Rio Grande	$\bar{x}$	37.35	37.03	40.77
	S.D.	13.9	13.2	10.2
Dixie Bee	$\bar{x}$	43.18	43.85	43.58
	S.D.	11.7	11.8	10.2

Results for hypothesis I show significant differences (multivariate F=2.96, d.f.=3.86 and $p < .04$) between the mean vectors of West Vigo and the combined means of Dixie Bee and Rio Grande. Further analysis shows that approximately 22% of the variation in the dependent measures is accounted for by the covariate. Univariate analysis shows significant differences exist between the different schools on both the Vocabulary subtest (F=6.46, d.f.=2.91, and $p < .02$) and the Arithmetic subtest (F=4.23, d.f.=2.91, and $p < .05$).

Results for the differences between Rio Grande and Dixie Bee showed no significant difference (multivariate F=1.83, d.f.=3.86 and $p < .15$) on the achievement score vectors.

Iowa Test of Basic Skills Results (Female)

Table 37 displays the differences between the three schools for females on the ITBS.

Table 37

ITBS 1975 for Females Across Schools

School		Voc.	Read.	Arith.
West Vigo	$\bar{x}$	44.10	42.20	45.00
	S.D.	11.0	10.5	7.5
Rio Grande	$\bar{x}$	42.57	43.58	42.53
	S.D.	10.9	10.9	8.0
Dixie Bee	$\bar{x}$	46.44	46.62	42.94
	S.D.	7.8	10.8	7.6

Results show a significant difference (multivariate F=2.91, d.f.=3.86, and p .04) between mean vectors for West Vigo vs. the combinational of Rio Grande and Dixie Bee on the various achievement scores for girls. Univariate analysis shows only significant differences across schools on the Arithmetic

test ($F=6.69$, d.f.=2.91, and $p < .01$). Further analysis shows that approximately 17% of the variance in the dependent variables is accounted for by the covariate. (Nelson Vocabulary subtest 1972)

When testing the achievement differences between achievement score vectors for girls in Dixie Bee and Rio Grande, no significant differences were found (multivariate $F=1.17$, d.f.=3.86, and $p < .33$).

Sixth Grade

To determine the achievement differences between 6th graders, the following subtests of ITBS were included: Vocabulary, Reading, and Arithmetic Total. These dependent measures were administered in the spring of 1975. In order to control for initial differences between the groups, three covariates were employed. (It should be noted that only two covariates could be used simultaneously in the multivariate analysis due to their interdependence.) The three covariates employed were the same variables measured as dependent measures but they had been obtained in the fall of 1972. Results are reported for only the analysis done with the covariates Vocabulary and Arithmetic since that particular set accounted for more variation in the dependent variables.

Male Results

Table 38 shows the subtest scores for the 6th grade boys on the following subtest of the Iowa Test of Basic Skills across different schools and years.

Table 38

Iowa Test of Basic Skills for 6th Grade
Males Across Schools for 1972 and 1975

School		1972 Voc.	1972 Read*	1972 Arith*	1975 Voc**	1975 Read**	1975 Arith**
West Vigo	$\bar{x}$	42.08	39.50	41.67	48.17	49.25	46.75
(N=12)	SD	14.3	14.7	11.1	29.2	27.5	26.6
Rio Grande	$\bar{x}$	40.56	39.56	41.88	58.50	60.12	58.25
(N=16)	SD	13.6	14.2	9.9	16.8	15.0	23.6
Dixie Bee	$\bar{x}$	45.07	47.53	42.40	64.33	67.47	62.33
(N=15)	SD	12.8	14.2	10.5	22.6	20.9	13.4

*Covariates
**Dependent Variables

The results show significant differences between the mean vector of achievement scores for West Vigo when compared with the combination of Dixie Bee and Rio Grande (multivariate F=3.34, d.f.=3.36, and $p < .03$). Univariate difference exists for all three variables separately: Vocabulary (F=6.66, d.f.=2.42, and $p < .01$), Reading (F=9.47, d.f.=2.42, and $p < .004$), Arithmetic total (F=6.81, d.f.=2.42, and $p < .01$).

No significant differences existed between the mean achievement vectors for Dixie Bee and Rio Grande when 73 vocabulary and arithmetic tests were contrasted.

Female Results

Table 39 shows the results for the 6th grade females on the ITBS administered in 1972 and 1975 across the different schools.

Table 39

Iowa Test of Basic Skills for 6th Grade
Females Across Schools for 1972 and 1975

School		1972 Voc.	1972 Read.	1972 Arith.	1975 Voc.	1975 Read.	1975 Arith.
West Vigo	$\bar{x}$	42.55	40.85	47.80	48.80	49.00	48.35
(N=20)	SD	12.3	9.9	9.0	24.4	23.7	24.2
Rio Grande	$\bar{x}$	44.08	45.83	44.00	58.92	64.67	63.00
(N=12)	SD	10.6	9.1	6.6	19.0	11.9	12.8
Dixie Bee	$\bar{x}$	38.00	41.64	40.36	56.14	59.29	57.29
(N=14)	SD	13.4	14.7	14.4	15.4	13.7	13.5

The data show significant differences between the mean achievement score vectors for West Vigo when compared with Dixie Bee and Rio Grande (multivariate $F=3.37$, $d.f.=3.39$, and $p < .03$). Separate univariate analyses show significant differences for all dependent variables: Vocabulary ($F=5.67$, $d.f.=3.42$, and $p < .02$), Reading ($F=8.73$, $d.f.=3.42$, and $p < .005$), and Arithmetic total ($F=10.46$, $d.f.=3.42$, and $p < .003$).

No significant differences were found between girls in Dixie Bee and Rio Grande in the achievement scores (multivariate $F=.38$, $d.f.=3.39$, and $p < .76$).

The results of these analyses would indicate the following:

1. With respect to initial third graders on the Nelson Reading Test there is not a significant difference statistically speaking between West Vigo and the mean of the other two schools. Thus, it would appear that the initial differences observed were corrected both at the end of the first year and continued throughout the project.

2. With respect to initial fourth graders significant differences remained between West Vigo and the mean of the other two schools. In other words on the I.T.B.S. West Vigo was significantly lower than the mean of the other two schools at the end of the project. Twenty-two percent of the variation in the achievement measures was accounted for by the covariate - which was the Nelson Vocabulary scores of the 1972-73 school year.

Differential Predictions of Achievement from Social-Affective Measures

In this study both the Nelson sub-tests and total as well as the various sections of the Iowa Test of Basic Skills administered in the 1975 school year were used as the dependent variables and selected BCCI variables (18) were used as independent variables.(initial 1972 scores) Pre-test BCCI data were then used as the predictors of achievement data obtained two and one-half years later. Data were run separately by schools and major SES groupings. Tables 40- 55 summarize the findings.

Nelson Reading Test Scores

Tables 40-42 summarize the results for the third grade males, and tables 48-50 summarize the results for the third grade females. Overall, the absence of negative teacher expectations and group artistic-intellectual nominations are most predictive of Nelson scores. But there after in specific schools differences occur that appear to be representative of the schools themselves. For example, the most predictive of all the measures

at Dixie Bee are group social nominations for boys and group enterprising nominations for girls. Thus getting along with others is very important for boys , and being energetic , active and a leadership type is important for girls at Dixie Bee. For Rio Grande, it would appear that outdoor-masculine nominations, enterprising behavior and avoiding being a trouble maker are the most important predictors of achievement for boys. For girls, a combination of group artistic-intellectual nominations, family reinforcers and positive teacher expectations appear to be related to achievement. For West Vigo avoiding negative teacher judgments and being a little disruptive seem to be predictive of achievement for boys while group artistic-intellectual nominations appear to be most predictive of girls' achievement.

In most instances the prediction for lower socioeconomic class boys and girls agrees closely with the pattern of West Vigo and the prediction for upper class boys and girls is more closely alligned to the pattern for Dixie Bee. This would make sense in terms of the socioeconomic composition of the schools.

Iowa Test of Basic Skills

The patterns observed for the Nelson have many similarities for the Iowa Tests. In general, group artistic-intellectual nominations appear to be most predictive for Dixie Bee for males on most of the Iowa variables. Conversely, group social nominations are most important as a predictor for the Iowa variable at Rio Grande. To some extent positive teacher expectations are also important at Dixie Bee and Rio Grande. But for males at West Vigo the most important predictor of achievement is the avoidance of negative teacher expectations.

For girls, an interesting reversal tends to manifest itself. At Dixie Bee and Rio Grande avoidance of negative teacher judgments is a major predictor of achievement on the various subscores. But for West Vigo group artistic-intellectual nominations appear to be significantly related to achievement, along with some degree of group judged reticence. For readers who may be interested in the specific combinations, a summary observation has been placed on each of the tables for interpretation.

Table 56 provides a summary of the simple correlations of the major variables predicting academic achievement for third graders over a two-and-one half year period. We may summarize the findings for this section of the report as follows:

1. Negative teacher ratings are associated with low achievement. High teacher ratings are associated with high achievement.

2. The basic thrusts of the three schools appear to be identified in the predictors of achievement, with Dixie Bee looking more for intellectual and cognitive dimensions, and fostering a climate in which group cohesiveness in peer nominations is strongly related to social class membership. Rio Grande appears to foster a climate in which social nominations and avoiding disruptive behavior is essential for high achievement. West Vigo's children tend to be higher achievers as they avoid negative teacher expectations, are somewhat disruptive (boys) or somewhat reticent and artistic-intellectual (girls).

Table 40

Step-Wise Regression
Using Nelson Paragraph Meaning Reading Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
The higher the group artistic-intellectual nominations, Nelson Total and peer female reinforcers and the lower the negative teacher expectations, the higher the Nelso Paragraph scores	All SS N=92	GAI	.44	.20	.20	.44
		TR-	.49	.24	.04	-.34
Group social conventional nominations predict paragraph reading scores	Dixie Bee N = 40	GSC	.59	.35	.35	.59
High group outdoor mechanical nominations, high intellectual and scientific interests, low group disruptive and high self-competency ratings predict paragraph scores	Rio Grande N = 31	GRM	.43	.19	.19	.43
		INT	.53	.28	.09	.32
		GD	.61	.37	.08	-.38
		STOT	.67	.45	.07	.27
Low negative teacher expectations and some group disruptive nominations tend to predict paragraph scores	West Vigo N = 21	TR-	.77	.59	.59	-.77
		GD	.82	.68	.08	.14
Group artistic-intellectual nominations and esthetic reinforcers are associated with paragraph achievement for upper class males	SES 4 or below N = 35	GAI	.51	.26	.26	.51
		ESR	.58	.34	.08	.33
Lack of negative teacher ratings and high family reinforcers associated with high paragraph scores for lower class males	SES 5 or above N = 52	TR-	.38	.15	.15	-.38
		FRR	.47	.22	.07	.22

Table 41
Step-Wise Regression
Using Nelson Vocabulary Reading Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
The higher the group social nominations and the lower the negative teacher judgments, the higher the vocabulary score	All SS N=92	GSC	.46	.21	.21	.46
		TR-	.52	.27	.05	-.41
Group social nominations predict vocabulary scores	Dixie Bee N = 40	GSC	.61	.37	.37	.61
Less group disruptive nominations, more group enterprising nominations, and interest in outdoor mechanical skills predict vocabulary scores	Rio Grande N = 31	GD	.46	.21	.21	-.46
		GE	.56	.32	.11	.04
		REAL	.63	.40	.08	.14
The fewer negative teacher expectations and esthetic reinforcers and the higher the disruptive nominations, the higher vocabulary score	West Vigo N = 21	TR-	.76	.58	.58	-.76
		ESR	.82	.68	.10	-.20
		GD	.86	.74	.06	.13
Group artistic-intellectual nominations predict vocabulary scores for high status males	SES 4 or below N = 35	GAI	.55	.31	.31	.55
The fewer negative teacher expectations and the higher the group outdoor mechanical skill nominations, the higher vocabulary scores for low SES males	SES 5 or above N = 52	TR-	.45	.20	.20	-.45
		GRM	.50	.25	.05	.30

Table 42

Step-Wise Regression
Using Nelson Total Reading Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
High group social negative nominations and lack of teacher ratings are associated with total reading scores	All SS N =92	GSC	.43	.18	.18	.43
		TR-	.50	.25	.06	-.41
Group social nominations are associated with high achievement in reading scores	Dixie Bee N = 40	GSC	.55	.31	.31	.55
Absence of disruptive nominations, high enterprising nominations, high outdoor mechanical interests, and high self-competency are associated with high reading achievement	Rio Grande N = 31	GD	.44	.19	.19	-.44
		GE	.56	.32	.12	.07
		REAL	.64	.41	.09	.15
		STOT	.71	.51	.09	.18
Absence of negative teacher ratings and some disruptive nominations are associated with high achievement	West Vigo N = 21	TR-	.80	.64	.66	-.80
		GD	.85	.72	.08	.14
High teacher expectations are associated more with middle than high achievement for upper class males	SES 4 or below N = 35	TR+	.47	.22	.22	.47
Absence of negative teacher expectations and group outdoor mechanical nominations are associated with lower class males	SES 5 or above N = 52	TR-	.46	.21	.21	-.46
		GRM	.52	.27	.05	.31

Table 43

Step-Wise Regression
Using ITBS Vocabulary Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Group artistic-intellectual and positive teacher expectations tend to predict vocabulary scores	All SS N=92	GAI	.51	.26	.26	.51
		TR+	.57	.33	.07	.46
Group social nominations predict vocabulary scores	Dixie Bee N = 40	GSC	.65	.42	.42	.65
Group artistic-intellectual nominations and lack of group descriptive nominations tend to predict vocabulary scores	Rio Grande N = 31	GAI	.52	.27	.27	.52
		GD	.60	.36	.09	-.44
Lack of negative teacher ratings is a predictor of vocabulary	West Vigo N = 21	TR-	.70	.49	.49	-.70
Group artistic-intellectual nominations tend to be more predictive for middle than highest socioeconomic status boys	SES 4 or below N = 35	GAI	.70	.49	.49	.70
Positive teacher ratings are associated with achievement for lower socioeconomic status groups	SES 5 or above N = 52	TR+	.46	.21	.21	.46

Table 44

Step-Wise Regression
Using ITBS Reading Score (5th Grade) as Independent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Positive teacher expectations, group artistic-intellectual nominations, lack of reticence and absence of negative teacher ratings are predictive or reading scores	All SS N=92	TR+	.52	.27	.27	.52
		GAI	.59	.35	.08	.48
		GR	.63	.39	.04	-.22
		TR-	.65	.43	.03	-.45
Group social nominations, absence of reticence, and lower classroom attitude are associated with reading achievement	Dixie Bee N = 40	GSC	.59	.35	.35	.59
		GR	.66	.43	.08	-.29
		CCI	.69	.48	.05	-.06
Group social nominations tend to predict reading	Rio Grande N = 31	GSC	.52	.27	.27	.52
Absence of negative teacher expectations are predictive of reading achievement	West Vigo N = 21	TR-	.80	.65	.65	-.80
Higher group artistic-intellectual nominations and absence of group disruptive nominations are associated with achievement for middle rather than upper class males	SES 4 or below N = 35	GAI	.61	.37	.37	.61
		GD	.68	.46	.09	-.42
Presence of positive teacher ratings, absence of negative ones, controlled behavior, and interest in self-stimulating reinforcers are more predictive or middle than low achievement	SES 5 or above N = 52	TR+	.53	.28	.28	.53
		TR-	.59	.35	.07	-.49
		CNT	.65	.43	.07	-.28
		SSR	.70	.50	.07	-.18

Table 45

Step-Wise Regression
Using ITBS Language (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Group artistic nominations, lack of negative teacher expectations, outdoor mechanical group skills, and absence of reticence tend to predict language achievement	All SS N=92	GAI	.59	35	.35	.59
		TR-	.63	.40	.05	-.41
		GRM	.66	.44	.04	.55
		GR	.68	.47	.02	-.14
Group social nominations predict language achievement	Dixie Bee N = 40	GSC	.66	.43	.43	.66
Group outdoor mechanical nominations and positive teacher expectations predict language achievement	Rio Grande N = 31	GRM	.66	.41	.41	.66
		TR+	.74	.56	.14	.52
Group outdoor mechanical nominations, intellectual task-oriented reinforcers, interest in outdoor mechanical skills, and good attitude towards school tend to predict language achievement	West Vigo N = 21	GRM	.64	.42	.42	.66
		ITR	.77	.60	.18	.51
		REAL	.82	.67	.07	.17
		CCI	.86	.74	.06	.27
Group artistic-intellectual nominations tend to predict language achievement for upper status boys	SES 4 or below N = 35	GAI	.67	.46	.46	.67
Group outdoor mechanical nominations and lack of negative teacher expectations tend to predict language achievement for lower class boys	SES 5 or above N = 52	GRM	.45	.20	.20	.45
		TR-	.52	.27	.06	-.34

Table 46

Step-Wise Regression
Using TTBS Math Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Positive teacher ratings, group social nominations, and lack of interest in outdoor mechanical skills tend to predict math scores	All SS N=92	TR+	.54	.29	.29	.54
		GSC	.60	.37	.07	.51
		REAL	.62	.39	.02	-.07
Group social nominations and absence of negative teacher ratings tend to predict math achievement	Dixie Bee N = 40	GSC	.57	.33	.33	.57
		TR-	.42	.08	.08	-.52
Group social nominations and positive teacher ratings tend to predict math achievement	Rio Grande N = 31	GSC	.57	.32	.32	.57
		TR+	.64	.41	.08	.53
Absence of negative teacher expectations tend to predict math achievement	West Vigo N = 21	TR-	.66	.44	.44	-.66
Group social nominations and absence of disruptive nominations tend to predict achievement for upper class males	SES 4 or below N = 35	GSC	.59	.35	.35	.59
		GD	.65	.43	.07	-.46
Positive teacher ratings are most predictive of achievement for lower class males	SES 5 or above N = 52	TR+	.53	.29	.29	.53

Table 47

Step-Wise Regression
Using SES (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variable (Males)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
High group social nominations are associated with high SES	All SS N=92	GSC	.34	.12	.12	-.34
High attitude towards school is associated with higher SES	Dixie Bee N = 40	CCI	.36	.13	.13	-.36
The fewer nominations and the more group social and negative teacher ratings, the lower SES	Rio Grande N = 31	GSC	.54	.30	.30	-.54
		TR-	.63	.40	.10	.51
NO predictors identified	West Vigo N = 21					

Table 48

Step-Wise Regression
Using Nelson Reading Test Vocabulary (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variables (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Avoidance of negative teacher expectations and group artistic-intellectual nominations predict vocabulary best	All SS. N=91	TR-	.48	.23	.23	-.48
		GAI	.51	.27	.03	.38
Self-stimulating reinforcers and self-control are most predictive of vocabulary	Dixie Bee N = 33	SSR	.48	.23	.23	.48
		GE	.56	.32	.08	-.01
Group artistic-intellectual, intellectual task-oriented reinforcers, Nelson Total, family reinforcers, and teacher positive expectations maximal predictors	Rio Grande N = 37	GAI	.52	.27	.27	.52
		ITR	.58	.34	.06	.37
		Nelson Total	.66	.43	.09	.06
		FRR	.71	.51	.07	.19
		TR+	.75	.57	.05	.36
Low self-competency, outdoor masculine nominations, and enterprising nominations are predictive of vocabulary	West Vigo N = 21	STOT	.47	.22	.22	-.47
		GRM	.70	.50	.27	.45
		GE	.81	.65	.15	.00
Avoidance of negative teacher expectations, obtaining of positive teacher expectations, and group reticent nominations predict vocabulary scores for upper class girls	SES 4 or below N = 33	TR-	.40	.16	.16	-.40
		GR	.55	.30	.14	.35
		TR+	.64	.41	.10	.06
Avoidance of negative teacher expectations and good performance on Nelson Total predict vocabulary for lower class girls	SES 5 or above N = 58	TR-	.50	.25	.25	-.50
		Nelson Total	.57	.32	.07	.35

Table 49

Step-Wise Regression
Using Nelson Reading Test Paragraph Meaning (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variables (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Avoidance of negative teacher expectations and gaining of group artistic-intellectual nominations most predictive of Nelson Reading Paragraph Meaning	All SS N=91	TR- GAI	.39 .43	.15 .19	.15 .03	-.39 .33
Self-stimulating nominations and Nelson Total most predictive of paragraph meaning	Dixie Bee N = 33	SSR Nelson Total 1975	.42 .27	.18 .09	.18 .09	.42 .04
Positive teacher expectations most predictive of paragraph meaning	Rio Grande N = 37	TR+	.46	.21	.21	.46
Avoidance of masculine interests and outdoor interests, group artistic-intellectual and poor attitude towards school most predictive of paragraph meaning	West Vigo N = 21	REAL GAI CCI	.49 .61 .76	.24 .38 .58	.24 .14 .20	-.49 .41 -.44
Group artistic-intellectual nominations most predictive for upper class females	SES 4 or below N = 33	GAI	.41	.17	.17	.41
Avoidance of negative teacher expectations most predictive for lower class females	SES 5 or above N = 58	TR-	.37	.14	.14	-.37

Table 50

Step-Wise Regression
Using Nelson Reading Test Total (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variables (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Avoidance of negative teacher expectations single most important predictor of Nelson Total	All SS N=91	TR-	.47	.22	.22	-.47
Interest in self-stimulation reinforcers and minimal group enterprising nominations are predictive of Nelson Reading Total	Dixie Bee	SSR	.46	.21	.21	.46
	N = 33	GE	.54	.30	.08	-.03
Avoidance of negative teacher expectations single most important predictor of Nelson Total	Rio Grande N = 37	TR-	.50	.25	.25	-.50
Lack of interest in outdoor physical occupations, group artistic-intellectual nominations, low self-competency, low enterprising nominations predict reading total		REAL	.50	.25	.25	-.50
		GAI	.64	.41	.15	.44
	West Vigo	STOT	.75	.56	.14	-.49
	N = 21	GE	.82	.68	.11	-.04
Avoidance of teacher negative expectations and many group reticent nominations predict reading for upper class girls	SES 4 or below	TR-	.44	.19	.19	-.44
	N = 33	GR	.54	.29	.09	.29
Avoidance of teacher negative expectations and high frequency of family reinforcers predict reading total for lower class girls	SES 5 or above	TR-	.48	.22	.22	-.47
	N = 58	FFR	.52	.27	.05	.32

Table 51

Step-Wise Regression
Using ITBS Vocabulary Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variable (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Avoidance of negative teacher expectations, obtaining group artistic-intellectual nominations, and control are most predictive of vocabulary	All SS N=91	TR-	.44	.19	.19	-.44
		GAI	.50	.25	.06	.41
		CNT	.55	.31	.05	.13
Avoidance of negative teacher expectations is most predictive of vocabulary achievement	Dixie Bee N = 33	TR-	.49	.24	.24	-.49
Avoidance of negative teacher expectations is most predictive of vocabulary achievement	Rio Grande N = 37	TR-	.54	.30	.30	-.54
Group artistic-intellectual nominations, interest in intellectual-scientific occupations, and avoidance of group disruptive nominations are most predictive of vocabulary	West Vigo N = 21	GAI	.53	.28	.28	.53
		INT	.74	.55	.27	-.47
		GD	.79	.62	.07	-.46
Avoidance of negative teacher expectations is most predictive of vocabulary achievement for upper class girls	SES 4 or below N = 33	TR-	.56	.32	.32	-.56
The obtaining of group artistic-intellectual nominations, avoidance of negative teacher expectations, and control are most predictive for lower class girls	SES 5 or above N = 58	GAI	.42	.18	.18	.42
		TR-	.48	.23	.05	-.39
		CNT	.54	.29	.05	.18

Table 52

Step-Wise Regression
Using ITBS Reading Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variable (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Avoidance of negative teacher expectations, group artistic-intellectual nominations, and controlled expression are predictors of reading	All SS N=91	TR- GAI CNT	.38 .45 .49	.15 .20 .24	.15 .05 .04	-.38 .37 .17
NO variables are significant predictors	Dixie Bee N = 33					
Group social nominations and avoidance of negative teacher expectations predict reading scores	Rio Grande N = 37	GSC TR-	.52 .58	.27 .34	.27 .07	.51 -.50
Group artistic-intellectual nominations and group reticent nominations predict reading scores	West Vigo N = 21	GAI GR	.61 .71	.38 .50	.38 .12	.62 .07
Avoidance of negative teacher expectations is the single most important predictor of reading scores for upper class girls	SES 4 or below N = 33	TR-	.46	.21	.21	-.46
The obtaining of group artistic-intellectual nominations is the single most important predictor of lower class girls reading achievement	SES 5 or above N = 58	GAI	.39	.15	.15	.39

Table 53

Step-Wise Regression
Using ITBS Language-1 Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variable (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Avoidance of negative teacher expectations and interest in family reinforcers are predictive of ITBS language scores	All SS N=91	TR-	.46	.21	.21	-.46
		FRR	.51	.26	.04	.26
Group reticent, shy nominations are predictive of language scores on the ITBS	Dixie Bee N = 33	GR	.40	.16	.16	.40
Avoidance of negative teacher expectations, intellectual task-oriented reinforcers and self-stimulating reinforcers predict language scores on the ITBS	Rio Grande N = 37	TR-	.44	.19	.19	-.44
		ITR	.56	.32	.13	.42
		SSR	.70	.49	.17	.003
Group artistic-intellectual and reticent nominations predict language achievement on the ITBS	West Vigo N = 21	GAI	.64	.41	.41	.64
		GR	.76	.57	.16	.04
Avoidance of negative teacher expectations are most predictive of language achievement for upper class girls	SES 4 or below N = 33	TR-	.42	.18	.18	-.42
Avoidance of negative teacher expectations and interest in family reinforcers are most predictive of language achievement for lower class girls	SES 5 or above N = 58	TR-	.47	.23	.23	-.47
		FRR	.54	.29	.06	.34

Table 54

Step-Wise Regression
Using ITBS Math Score (5th Grade) as Dependent Variable
and BCCI 3rd Grade Variables as Independent Variables (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Positive teacher expectations, group artistic-intellectual, peer nominations, and controlled expression predict math achievement	All SS N-91	TR+	.48	.23	.23	.48
		GAI	.56	.31	.07	.41
		GD	.59	.35	.03	-.26
Intellectual task orientation reinforcers and controlled expression are most predictive of math achievement at Dixie Bee	Dixie Bee N = 33	ITR	.36	.13	.13	.36
		GD	.48	.23	.09	-.21
Lack of negative teacher expectations and peer group social conventional nominations are most predictive at Rio Grande	Rio Grande N = 37	TR-	.62	.39	.39	-.62
		GSC	.67	.45	.05	.53
Positive teacher expectations, group artistic-intellectual nominations, and positive intellectual task orientation are predictive at West Vigo	West Vigo N = 21	TR+	.60	.36	.36	.60
		GAI	.71	.51	.14	.59
		ITR	.79	.63	.11	-.30
Upper class girls need to avoid negative teacher expectations, exhibit control, and gain enterprising nominations from the group	SES 4 or below N = 33	TR-	.62	.38	.38	-.62
		CNT	.68	.47	.08	.28
		GE	.73	.53	.06	.25
Lower class girls math achievement is predicted by group artistic-intellectual nominations and positive teacher nominations	SES 5 or above N = 58	GAI	.47	.23	.23	.47
		TR+	.58	.33	.10	.46

Table 55

Step-Wise Regression
Using SES (5th Grade) as Dependent Variable
and BCCI 3rd Grade Scores as Independent Variables (Females)

Observations	Group	Predictor Variable	Multiple R	R^2	R^2 Change	Simple R
Negative teacher expectations is significantly related to low SES	All SS N=91	TR-	.43	.19	.19	.43
Group artistic-intellectual nominations and high control predict high SES	Dixie Bee	GAI	.35	.12	.12	-.35
	N = 33	CNT	.58	.34	.21	-.35
Negative teacher expectations is significantly related to lower SES	Rio Grande N = 37	TR-	.56	.32	.32	.56
Positive teacher expectations is significantly related to high SES	West Vigo N = 21	TR+	.43	.18	.18	-.43

Table 56

Summary of Regression Correlations by Achievement and School
Using Simple Correlations (Males-Females)

	ITBS VOC			ITBS MATH			ITBS LAN			ITBS READ			NELSON VOC			NELSON PARA			NELSON TOT		
	ALLDB	RG	WV	ALLDB	RG	WV	ALLDB	RG	WV	ALLDB	RG	WV	ALLDB	RG	WV	ALLDB	RG	WV	ALLDB	RG	WV
STOT															-47			27			18-49
GAI	41/51		52 53	41		59	59		64	37/48		51 62	38		52	33/44		41			44
GRM							55		66 66						45			43			
GSC		65			51 57	57/53		66			59 52			46 61			59			43 55	
GE																					
GD			-44-46		-26-21										-46						-44 14
GR								40			-22-29							-38			
INT			-47															32			
REAL																		-49			15-50
CNT	18										17										
TR+	46			48/54		53 60			52		52				36			46			
TR-	-44-49-54-70				-52-62-66		-46/-41		-44		-38/-45		-50-80	-48/-41		-76	-39/-34		-77	-47/-41		-50-80
SSR														48			42			46	
ESR															-20						
FRR							26								19						
CCI									27									-44			
PRF																					
ITR					36	-30			42 51						37						

Note: females are underlined.

Changes in Social-Affective Dimensions

One of the most unique aspects of this entire effort was the attempt to bring about some change in the social-affective domains as well as in the basic achievement thrust. A series of sub-studies are reported here that relate to this problem. The first one looks at the three year prediction between 1972 BCCI factor scores (the multi-trait , multi-method six scores that combine most of the instrument's inputs) and 1975 seventh grade scores on the Barclay Learning Needs Inventory. As may be recalled, the BCCI is appropriate for grades up to the sixth grade. The Barclay Learning Needs Inventory (hereafter referred to as BLNI) is designed similarly to the BCCI, has the same general problem areas and can be used in junior high, senior high or college settings. The question here was: do the BCCI factor scores of 1972 predict learning problems in 1975 ?

A second procedure involved a multivariate analysis of the 1975 fifth graders (original third graders) on selected BCCI variables using the 1975 BCCI scores as the dependent variables and covarying the effects of the 1972 BCCI scores. This analysis was done by sex and by school. The question here was: is there a significant difference between the schools shown on selected BCCI variables ?

Finally, a similar multivariate analysis was completed on the BLNI scores for the current seventh grade . The question here was: is there any significant difference between the levels of problems in the seventh graders that may be attributed to the school effects ?

Step-wise regressions

Using the BCCI 1972 multi-trait multi-method factor scores as independent variables and the BLNI scale scores separately as dependent variables step-wise regressions were run for all combinations, male and female. The BLNI is scored in such a way that the higher the score, the more the learning problems in that area. Similar to the BCCI, the BLNI employs another source, which in this case was the teacher as a rater. The BLNI is likewise computer processed for a report directly to the student, teacher, parent or counselor. The subjects for this study were forty-four boys drawn from the three schools and forty-four girls drawn from the same schools.

The overall findings of the step-wise regressions reported in tables 57-86 is that a considerable portion of the variance associated with 7th grade learning problems is related to fifth grade sociability-affiliation factor scores . The total amount of variance predicted by the BCCI factor scores for the separate BLNI scores ranges from a low of 28 % to a high of 71%. Thus, it is apparent that children who have social-affective problems in the fifth grade tend to have similar problems in the seventh grade.

Table 57

Step-Wise Regression
on BLNI Self-Concept Deficits
for Boys using Pre-Test BCCI Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.28		.07	3.62	.05
1	Achievement-motivation	-.24		.09	.59	--
2	Impulsivity-control	.19	(.34)	.12	1.22	--

(Same for all boys) af 1 + 43 > .05 = 4.08, > .01 = 7.31

Table 58

Step-Wise Regression
on BLNI Self-Concept Deficits
for Girls using Pre-Test BCCI Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.43		.18	10.55	.01
2	Impulsivity-control	.21		.22	1.92	--
3	Achievement-motivation	.06		.24	1.36	--
6	Enterprising-dominance	-.32	(.50)	.25	.37	--

(Same for all girls) af 1 + 48 > .05 = 4.04 > .01 = 7.18

Table 59

Step-Wise Regression
on BLNI Group Interaction Deficits
for Boys using Pre-Test BCCI Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.28		.07	3.48	--
2	Impulsivity-control	.16		.12	2.03	--
5	Sociability-affiliation	-.26	(.35)	.12	.14	--

Table 60

Step-Wise Regression
on BLNI Group Interaction Deficits
for Girls Using Pre-Test BCCI Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.53		.28	18.46	.01
3	Introversion-seclusiveness	.11		.32	2.69	--
4	Energy-activity	-.29		.35	1.65	--
2	Impulsivity-control	.15	(.60)	.36	.85	--

Table 61

Step-Wise Regression
on BLNI Self-Control Deficits
for Boys Using Pre-Test BCCI Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.36		.13	6.34	.05
2	Impulsivity-control	.26		.16	1.30	--
1	Achievement-motivation	-.30		.20	2.22	--
4	Energy-activity	-.14	(.46)	.21	.27	--

Table 62

Step-Wise Regression
on BLNI Self-Control Deficits
for Girls Using Pre-Test BCCI Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.38		.14	7.94	.01
4	Energy-activity	-.36		.18	2.24	--
2	Impulsivity-control	.14		.22	1.92	--
3	Introversion-seclusiveness	-.07	(.48)	.23	.46	--

Table 63

Step-Wise Regression
on BLNI Verbal Deficits for Boys
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.30		.09	4.21	.05
2	Impulsivity-control	.19		.15	2.81	--
5	Sociability-affiliation	-.30	(.40)	.16	.27	--

Table 64

Step-Wise Regression
on BLNI Verbal Deficits for Girls
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.53		.28	18.28	.01
3	Introversion-seclusiveness	.08		.31	1.83	--
4	Energy-activity	-.32	(.58)	.34	2.00	--

Table 65

Step-Wise Regression
on BLNI Energy Deficits for Boys
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.26		.06	2.93	--
3	Introversion-seclusiveness	.17	(.28)	.08	.93	--

Table 66

Step-Wise Regression
on BLNI Energy Deficits for Girls
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociablitiy-affiliation	-.53		.28	18.07	.01
3	Introversion-seclusiveness	.08		.30	1.79	--
4	Energy-activity	-.28	(.57)	.33	1.00	--

Table 67

Step-Wise Regression
ib BLNI Cognitive-Motivation Deficits for Boys
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.40		.16	8.23	.01
1	Achievement-motivation	-.34		.19	1.21	--
2	Impulsivity-control	.24		.23	2.11	--
6	Enterprising-dominance	-.31	(.52)	.27	1.92	--

Table 68

Step-Wise Regression
on BLNI Cognitive-Motivation Deficits for Girls
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.65		.42	34.34	.01
3	Introversion-seclusiveness	.09		.46	3.34	--
4	Energy-activity	-.31		.47	.93	--
1	Achievement-motivation	-.57	(.69)	.48	.70	--

Table 69

Step-Wise Regression
on BLNI Attitude Deficits for Boys
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.44		.19	10.04	.01
2	Impulsivity-control	.30		.23	1.75	--
6	Enterprising-dominance	-.29	(.53)	.28	2.79	--

Table 70

Step-Wise Regression
on BLNI Attitude Deficits for Girls
Using BCCI Pre-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R	F	P
5	Sociability-affiliation	-.60		.36	26.20	.01
3	Introversion-seclusiveness	.11		.40	3.24	--
1	Achievement-motivation	-.58		.43	2.46	--
4	Energy-activity	-.30	(.66)	.44	.90	--

Table 71

Step-Wise Regression
on BLNI Self-Concept Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
4	Energy-activity	-.34		.11	5.36	.05
1	Achievement-motivation	-.33		.24	6.76	.05
3	Introversion-seclusiveness	.29		.28	2.41	--
2	Impulsivity-control	.28	(.54)	.29	.65	--

Table 72

Step-Wise Regression
on BLNI Self-Concept Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.41		.17	9.65	.01
4	Energy-activity	.02		.22	2.74	--
2	Impulsivity-control	.16	(.49)	.24	1.19	--

Table 73

Step-Wise Regression
on BLNI Group Interaction Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
2	Impulsivity-control	.30		.09	4.26	.05
6	Enterprising-dominance	-.14		.16	3.27	--
3	Introversion-seclusiveness	.25		.19	1.43	--
1	Achievement-motivation	-.28	(.46)	.21	.40	--

Table 74

Step-Wise Regression
on BLNI Group Interaction Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.52		.27	17.01	.01
4	Energy-activity	-.02	(.56)	.32	3.32	--

Table 75

Step-Wise Regression
on BLNI Self-Control Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
2	Impulsivity-control	.41		.16	8.25	.01
6	Enterprising-dominance	-.19		.29	7.31	.01
4	Energy-activity	-.27	(.55)	.30	.72	--

Table 76

Step-Wise Regression
on BLNI Self-Control Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.38		.14	7.80	.01
6	Enterprising-dominance	-.16		.20	3.01	--
2	Impulsivity-control	.21		.22	1.24	--
1	Achievement-motivation	-.35	(.49)	.24	1.38	--

Table 77

Step-Wise Regression
on BLNI Verbal Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.34		.12	5.53	.05
4	Energy-activity	-.27		.20	4.37	.05
3	Introversion-seclusiveness	.25		.23	1.71	--
2	Impulsivity-control	.30		.26	1.43	--
5	Sociability-affiliation	-.26	(.53)	.28	.81	--

Table 78

Step-Wise Regression
on BLNI Verbal Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.53		.26	17.89	.01
4	Energy-activity	-.02	(.57)	.33	3.50	--

Table 79

Step-Wise Regression
on BLNI Energy Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
4	Energy-activity	-.35		.12	5.69	.05
2	Impulsivity-control	.33		.17	2.30	--
6	Enterprising-dominance	-.06	(.45)	.20	1.88	--

Table 80

Step-Wise Regression
on BLNI Energy Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
5	Sociability-affiliation	-.51		.26	16.87	.01
4	Energy-activity	-.48		.30	2.47	--
2	Impulsivity-control	.17	(.56)	.32	1.54	--

Table 81

Step-Wise Regression
on BLNI Cognitive-Motivation Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.43		.19	9.63	.01
3	Introversion-seclusiveness	.35		.31	7.18	.05
2	Impulsivity-control	.34		.38	4.34	.05
6	Enterprising-dominance	-.29	(.63)	.40	1.56	--

Table 82

Step-Wise Regression
on BLNI Cognitive-Motivation Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.64		.41	32.23	.01
2	Impulsivity-control	.14		.47	5.53	.05
3	Introversion-seclusiveness	.18		.50	2.43	--
5	Sociability-affiliation	-.60	(.71)	.51	.75	--

Table 83

Step-Wise Regression
on BLNI Attitude Deficits for Boys
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.39		.15	7.60	.01
3	Introversion-seclusiveness	.34		.27	6.52	.05
2	Impulsivity-control	.37		.36	5.37	.05
6	Enterprising-dominance	-.24	(.61)	.38	1.41	--

Table 84

Step-Wise Regression
on BLNI Attitude Deficits for Girls
Using BCCI Post-Test Factor Scores

FACTOR	VARIABLE ENTERED	SIMPLE R	MULTIPLE R	R^2	F	P
1	Achievement-motivation	-.62		.39	29.89	.01
2	Impulsivity-control	.14		.45	5.27	.05
3	Introversion-seclusiveness	.20		,48	2.90	--
5	Sociability-affiliation	-.70	(.71)	.50	1.12	--

Table 85

Summary Step-Wise Regressions
Between BLNI Scales and BCCI Factor Scores
for Males

FACTORS	I	II	III	IV	V	VI	Mult	BLNI	R^2
	ACH	IMP	INTRO	ENG	SOC	ENT	R		
					.05		.34	STOT	.12
	.05						.35	GTOT	.12
					.05		.46	SCNT	.21
PRE	.05						.40	VERB	.16
							.28	ENG	.08
					.01		.52	COG	.27
					.01		.53	ATT	.28
	.05			.05			.54	STOT	.29
		.05					.46	GTOT	.21
		.01				.01	.55	SCNT	.30
POST	.05					.05	.53	VERB	.28
					.01		.56	ENG	.32
	.01	.05	.05				.63	COG	.40
	.01	.05	.05				.61	ATT	.38

Table 86

Summary Step-Wise Regressions
for BLNI Variables
Using BCCI Pre & Post Factor Scores
for Females

FACTORS	I	II	III	IV	V	VI	MULT	BLNI	R^2
	ACH	IMP	INTRO	ENG	SOC	ENT	R		
					.01		.50	STOT	.25
					.01		.60	GTOT	.36
					.01		.48	SCNT	.23
PRE					.01		.58	VERB	.34
					.01		.57	ENG	.33
					.01		.69	COG	.48
					.01		.66	ATT	.44
					.01		.49	STOT	.24
					.01		.56	GTOT	.32
					.01		.49	SCNT	.24
POST					.01		.57	VERB	.33
					.01		.56	ENG	.32
	.01	.05					.71	COG	.51
	.01	.0[illegible]					.71	ATT	.50

Multivariate Analysis of BCCI Subtests (5th Grade)

In addition to looking at the achievement variables, certain important affective measures were compared across schools. These measures initially included the Attitude Toward School (CCI), Total Self Competency (STOT), Intellectual Reinforcers (ITR), Peer Male Interest (PRM), and Peer Female Interest (PRF).

Several one-way multivariate analyses of variance were run using the five variables previously mentioned as dependent variables and covariates. The dependent measures were obtained in the spring of 1975 and the covariate measures on the same variables were taken in the fall of 1972.

Females

Data in Table 87 shows the means and standard deviations for the girls' BCCI subtest scores for 1972 and 1975.

Results from the multivariate analysis of covariance for the girls show a significant difference between West Vigo and the combined scores of Rio Grande and Dixie Bee (multivariate $F=2.24$, d.f.$=5.82$, and $p<.06$). Significant univariate differences existed for the variables Attitude Toward School (CCI), ($F=4.6$, d.f.$=2.91$, and $p<.03$) and for Intellectual Reinforcers ($F=4.5$, d.f.$=2.91$, and $p<.04$). These results indicate that the 5th grade girls at West Vigo are both more positive toward the school atmosphere and have a significantly higher score on the school task orientation variable. Further analysis shows that the addition of the three covariate accounted for only approximately 5% of the variation in the dependent variables. A closer look at the component structure of the dependent variables shows that all of the dependent variables load highly on the first component which accounts for 55% of the variance. This would indicate a close relationship between the

responses to the dependent variables chosen. Finally, although the differences were not tested, it is important to look at the differences over time. The data show that over the three year period, the females at West Vigo, after initially being less favorable toward school than either Dixie Bee or Rio Grande, are now more favorable toward school than the other schools. This same phenomenon was also noted on the Intellectual Reinforcers scale, although all three schools showed a rather sharp decline on this variable.

No differences on the five dependent variables was noted between Rio Grande and Dixie Bee (multivariate $F=.59$, d.f.$=5.82$, and $p < .70$).

The results for boys are displayed in Table 88.

Table 87

Selected BCCI Subtest Scores for Females
Across Schools and Years (1972, 1975)

School	Total Self Competency STOT**	Intellectual Reinforcers TR	1972 Peer Male Interests PRM**	Peer Female Interests PRF	Attitude Toward School CCI*
West Vigo (N=20) $\bar{x}$	14.10	12.45	25.15	16.85	8.50
SD	4.7	2.1	3.0	3.5	2.6
Rio Grande (N=38) $\bar{x}$	15.36	13.81	28.53	18.39	10.76
SD	4.1	3.1	5.7	3.2	2.0
Dixie Bee (N=34) $\bar{x}$	14.00	13.82	28.88	18.32	9.59
SD	4.5	2.6	5.5	3.0	2.2
	STOT*	TR*	1975 PRM*	PRF*	CCI*
West Vigo (N=20) $\bar{x}$	13.80	7.30	15.15	10.25	9.40
SD	3.4	2.8	5.6	3.3	2.2
Rio Grande (N=38) $\bar{x}$	13.84	5.55	15.45	10.29	8.52
SD	3.8	2.7	5.1	2.9	2.6
Dixie Bee (N=34) $\bar{x}$	13.79	6.44	16.70	10.50	8.32
SD	3.4	2.2	4.5	2.1	2.8

* Dependent variables
** Covariates

Table 88

Selected BCCI Subtest Scores for Males
Across Schools and Years (1972, 1975)

School	Total Self Competency STOT**	Intellectual Reinforcers TR	Peer Male Interests PRM**	Peer Female Interests PRF	Attitude Toward School CCI*
			1972		
West Vigo (N=21) $\bar{x}$	16.85	13.90	29.86	15.33	10.29
SD	4.7	3.7	8.0	3.1	3.6
Rio Grande (N=40) $\bar{x}$	15.75	15.05	33.08	16.42	9.35
SD	3.7	2.3	4.2	2.3	2.4
Dixie Bee (N=31) $\bar{x}$	14.75	13.00	30.48	15.32	9.13
SD	4.8	3.3	5.7	3.5	3.1
	STOT	TR	1975 PRM	PRF	CCI
West Vigo (N=21) $\bar{x}$	15.19	7.19	18.71	8.71	8.14
SD	3.1	2.3	4.3	2.1	2.4
Rio Grande (N=40) $\bar{x}$	14.55	7.50	19.42	8.98	8.05
SD	3.2	2.5	4.4	2.8	3.0
Dixie Bee (N=31) $\bar{x}$	15.35	7.35	19.94	9.29	7.42
SD	3.5	2.9	5.6	3.1	2.7

* Dependent variables
** Covariates

The results for boys show no significant differences between the mean vectors of the selected affective variables for West Vigo when compared with the combination of Dixie Bee and Rio Grande (multivariate F=.32, d.f.=5.85, and $p < .90$). The principal component of dependent variables shows that all five variables have high loadings on the primary component which accounts for approximately 60% of the total variation. It is also important to notice from Table 88 that for every dependent variable there is a decrease in the scores from 72 to 75.

No differences were found between Rio Grande and Dixie Bee on the affective variables (multivariate F=.84, d.f.=5.85 and $p < .52$).

Sixth Grade Affective Variables

Differences between the three schools on affective variables were tested using the Barclay Learning Needs Inventory (BLNI). Since the multivariate program being used could only test a limited number of dependent variables simultaneously, two separate runs were made for both males and females. The first analysis compared the three schools on the last seven subscales. The results are displayed in the following tables.

Females

The means and standard deviations for the results of the subtest on the BLNI are displayed in Table 89.

Table 89

Descriptive Statistics for Females
On Subtests of the BLNI Across Schools

Subscales		West Vigo (N=20)	Rio Grande (N=12)	Dixie Bee (N=14)
(Self Report)				
1. Social Desirability	$\bar{x}$	10.00	10.25	8.35
	SD	4.1	4.1	2.8
2. Self Competency	$\bar{x}$	38.75	23.50	31.79
(STOT)	SD	12.4	14.3	12.4
3. Group Interaction	$\bar{x}$	21.30	15.41	23.85
(GTOT)	SD	11.5	15.2	10.7
4. Self Control (SCNT)	$\bar{x}$	19.90	15.92	20.08
	SD	9.8	10.6	10.5
5. Verbal Skills	$\bar{x}$	22.90	17.75	22.64
(VERBAL)	SD	11.8	18.0	9.9
6. Energy Level	$\bar{x}$	26.75	21.33	26.35
(ENERGY)	SD	15.9	17.4	12.4
7. Cognitive Motivation	$\bar{x}$	21.90	19.17	26.00
(COG MOT)	SD	13.8	12.4	9.9
8. Attitude	$\bar{x}$	25.55	23.5	31.43
	SD	12.9	13.4	10.9
(Rater Scales)				
9. STOT	$\bar{x}$	2.55	1.92	2.28
	SD	1.2	.9	1.1
10. GTOT	$\bar{x}$	2.10	1.92	1.93
	SD	1.0	.9	.9
11. SCNT	$\bar{x}$	1.85	1.83	1.50
	SD	.9	.7	.7
12. VERBAL	$\bar{x}$	2.05	1.75	2.07
	SD	1.1	.8	1.0
13. ENERGY	$\bar{x}$	2.10	1.92	1.71
	SD	1.1	1.1	.7
14. COG MOT	$\bar{x}$	1.90	2.08	2.00
	SD	1.1	1.0	.9
15. Attitude	$\bar{x}$	1.80	1.83	1.57
	SD	1.0	1.0	.8

Results for the affective variables show no differences between the West Virgo and a combination of Dixie Bee and Rio Grande using either the eight self report variables as dependent variables or the seven rater scales as dependent variables. The multivariate F for the eight self report variables was .86 with degree of freedom equal to 1.36 and $p < .55$. For the seven rater scales the multivariate F=.50 with d.f.=7.37 and $p < .83$. Further analysis shows that one component accounted for 83% of the variation in the self report scores. A smiliar analysis of rater subscores shows that 58% of the variation is accounted for by one component. This may be interpreted as meaning that the eight self rating scores are much more similar in terms of responses than the seven outside rater scores.

To significant differences between self rating scores (multivariate F=1.74, d.f.=8.36 and $p < .12$) or outside rater scores (multivariate F=.66, d.f.=7.34 and $p < .70$) were found between Rio Grande and Dixie Bee.

Males

The results from the analysis of the male data on affective measures can be found in Table 90.

Table 90

Descriptive Statistics for Males
On Subtests of the BLNI Across Schools

Subscales		West Vigo	Rio Grande	Dixie Bee
(Self Report)				
1. Social Desirability	$\bar{x}$	8.67	9.93	10.25
	SD	3.9	4.9	4.7
2. Self Competency	$\bar{x}$	28.75	26.87	22.81
(STOT)	SD	13.0	12.0	19.4
3. Group Interaction	$\bar{x}$	21.33	21.53	17.19
(GTOT)	SD	12.4	10.6	18.2
4. Self Control (SCNT)	$\bar{x}$	23.75	23.47	18.31
	SD	14.6	15.4	18.5
5. Verbal Skills	$\bar{x}$	21.58	22.33	18.06
(VERBAL)	SD	12.6	10.4	16.1
6. Energy Level	$\bar{x}$	24.50	21.67	22.38
(ENERGY)	SD	15.8	9.8	20.1
7. Cognitive Motivation	$\bar{x}$	25.17	25.53	23.40
(COG MOT)	SD	14.6	19.9	19,0
8. Attitude	$\bar{x}$	31.67	30.93	25.69
	SD	13.6	21.4	18.9
(Rater Scales)				
9. STOT	$\bar{x}$	2.75	2.27	1.43
	SD	1.1	1.1	1.2
10. GTOT	$\bar{x}$	2.58	2.13	2.90
	SD	.9	.9	1.0
11. SCNT	$\bar{x}$	2.58	2.40	1.94
	SD	.9	1.0	.9
12. VERBAL	$\bar{x}$	2.25	2.13	2.12
	SD	1.1	1.1	1.1
13. ENERGY	$\bar{x}$	2.17	1.87	2.12
	SD	.9	.9	1.0
14. COG MOT	$\bar{x}$	2.33	2.33	2.50
	SD	1.1	1.1	1.3
15. Attitude	$\bar{x}$	2.00	1.93	2.25
	SD	.9	1.0	1.3

Results show no significant differences between males in West Vigo when compared with males from Rio Grande and Dixie Bee on the mean vectors of affective measures. The multivariate F for the eight self report scales was .39 with degrees of freedom = 8.33 and $p < .92$. For the seven other rater subscales the multivariate F was 1.50 with degrees of freedom = 7.34 and $p < .20$. Principal components show similar results to the females with the first component of the eight self rating scales accounting for 85% of the variation while the first component of the rater scales accounted for 65% of the variation.

No significant differences existed between the affective mean vectors of the boys in Dixie Bee and Rio Grande. The multivariate F for the eight self rating scales was 1.7 with degree of freedom = 8.33 and $p < .13$. For the seven rater scales the multivariate F was 1.5 with degree of freedom = 7.34 and $p < .20$.

The findings for the three social-affective change studies suggest the following conclusions:

1. BCCI factor scores obtained in 1972 are highly predictive of BLNI problems across schools in 1975 for seventh graders.

2. No significant differences are found between BLNI scores when children from the three schools are compared in the seventh grade. In other words, West Vigo seventh graders do not differ significantly either in terms of the magnitude of their problems or the characteristics of their seventh grade teacher ratings. This suggests that insofar as children from West Vigo are considered, they do not have more social-affective learning problems as measured by the BLNI than do children from Dixie Bee and Rio Grande.

3. In terms of change, West Vigo girls manifest a more positive attitude towards school, are are significantly higher on the school task orientation reinforcers. After initially being more unfavorably disposed towards school and task-orientation reinforcers, they are now significantly higher than either Dixie Bee or Rio Grande. No significant differences between schools are noted for males.

Conclusion

The results of this chapter support the trend noted in the first year studies. In brief the findings are that in terms of the Nelson Test, no significant differences exist between the three schools, suggesting that West Vigo by concentrated effort raised the achievement level in basic vocabulary and reading experiences. This was not observed with regard to the Iowa Test of Basic Skills where significant differences still exist between the schools . However, much of the basic differences must be attributed to the almost invariant set of characteristics carried and manifested by socio-economic differences. This is evident in the very different set of predictors that exist for achievement by schools. Finally, in terms of social-affective change we can observed that West Vigo substantially altered the environment and reinforcement contingencies for girls in the sample tested. The fact that no significant difference (statistically) was observed in seventh grade learning problems is further evidence to the effectiveness of West Vigo's program.

CHAPTER 5

ADDITIONAL STUDIES AND CONCLUSION

This final chapter will review several studies relating to teacher evaluation, classroom climate variables, suspected problems and trends by schools. It will conclude with some summary observations and suggestions.

Teacher Evaluation

In every project aside from the evaluation of the outcomes, it is important to evaluate the reactions of teachers who participated in the project. In April of 1975 Mr. Scott distributed a questionnaire to the participating teachers at the three schools. This questionnaire was filled out and sent directly to the evaluators. The questionnaire and its results are listed below in Figure 1.

Figure 1

1 Strongly Agree	2 Agree	3 ?	4 Disagree	5 Strongly Disagree	Mean
1. There has been an improvement in our general school atmosphere					2.0
a. Children are feeling better about themselves (self-concept)					1.9
b. Staff members are working more as a unit and sharing more ideas					2.0
c. Parents are being contacted more frequently for things their children do well					2.2
2. There has been a change in teaching philosophy and methods used					2.1
a. More teaming and grouping is being done					1.8
b. Children are being recognized more consistently for individual improvements in behavior and work					1.7
c. Individual student needs are being met more frequently					1.7
d. Special recognition is more frequently planned and given as an incentive					2.0
3. Instructional aides have been as asset to our school					1.3
a. They have been used most successfully in recess and cafeteria duties					2.2
b. They have been used most successfully in routine clerical assistants					2.3

N teachers responding 56

The results of the teacher evaluation of the success of the project show an overshelmingly positive response.

Comparison of Climates

Several of the initial studies completed for the West Vigo School corporation dealt with comparative proportions of suspected problems indicated in each of the schools. Ordinarily it is difficult to compare these data because it is imperative that the exact number of children be compared pre and post. In the usual course of events children drop out, transfer to other schools and new students are added. For these reasons and others the suspected problems data are difficult to utilize. However, in this study approximately 30 children from each school were found who had complete pre and posttesting scores. These children were drawn from the initial testing of third graders. They were still in the same school as sixth graders. An analysis was made utilizing these data. No statistical analysis was completed, but graphs were completed to show the comparative trends.

Figures 2,3, and 4 provide psychograph information about the trends observed for these children over a three year period in the same school. Table 91 provides the summary percentages of problems indicated for both male and female groups between schools and on a pre-post comparison basis.[1]

---

[1] The suspected problems table in the BCCI printout represents an effort to infer problems from certain combinations of data. For example, if a boy receives many nominations from his peers as being disruptive and aggressive. If at the same time he receives no positive nominations, and also receives a number of negative teacher ratings describing him as aggressive, hostile, etc., it is very likely that he has some problem in self-management or self-control. An "X" then appears in the summary printout to alert school staff to a possible problem in that area. The same reasoning is followed for the rest of the suspected problems.

Figure 2

West Vigo Pre and Post Comparisons

on a Sample of Children

For Suspected Problems

Psychograph to Interpret Percentage of Suspected Problems Against Comparative Classroom Norms for Males

Percentile Equivalent	Suspected Problem Areas (percentages)								
	Self	Group	Self-Control	Verbal	Energy	Vocational	Cognitive	Attitude
99	52-54+	46-48+	34-36+	26-30+	25-27+	43-45+	55-57+	49-51+
95-98	49-51	34-45	22-33	16-25	19-24	40-42	46-54	46-48
90-94	46-48	28-33		13-15	13-18	37-39	37-45	37-45
85-89	40-45	25-27	19-21			31-36	31-36	34-36
80-84	34-39		16-18	10-12	10-12	28-30	28-30	31-33
75-79		22-24	13-15		7-9	22-27	25-27	25-30
70-74	31-33	19-21	10-12	7-9			22-24	
65-69	28-30			4-6		13-18	19-21	
60-64	25-27	16-18	7-9					22-24
55-59		13-15			4-6	13-15	16-18	19-21
50-54	22-24			0-3		10-12	13-15	
45-49	19-21		4-6		0-3	7-9		16-18
40-44		10-12					10-12	
35-39	16-18							13-15
30-34	13-15	7-9	0-3				7-9	
25-29	10-12					4-6		
20-24		4-6					4-6	10-12
15-19	7-9	0-3				0-3	0-3	
10-14	4-6							7-9
5-9	0-3							4-6
0-4								0-3

INSTRUCTIONS:

Consult percentages of problems indicated in summary table of printout. Place a dot at the proper interval and connect dots. The resultant graph will provide an analysis of how boys in a specific classroom compare with boys in 368 classrooms. It should also be noted that in some problem areas boys have fewer problems (verbal and energy). The fact that problems are at a comparatively high percentile means that the vast majority of classrooms do not have high percentages of suspected problems in these areas.

N = 34

Psychograph to Interpret Percentage of Suspected Problems Against Comparative Classroom Norms for Females

Percentile Equivalent	Suspected Problem Areas (percentages)							
	Self	Group	Self-Control	Verbal	Energy	Vocational	Cognitive	Attitude
99	55+	64-66+	25-27+	24-30+	64-66+	34-36+	61-63+	49-51+
95-98	52-54	49-63	16-24	22-23	49-63	31-33	43-60	46-48
90-94	46-51	46-48	10-15	19-21	37-48	25-30	37-42	43-45
85-89	37-45	43-45		16-18		19-24	31-36	37-42
80-84	34-36	37-42	7-9	13-15	28-33	16-18	25-30	31-36
75-79	31-33	34-36				13-15		
70-74	28-30	31-33		10-12	25-27		22-24	28-30
65-69	25-27		4-6		22-24		19-21	25-27
60-64		28-30		7-9	19-21	10-12		22-24
55-59	22-24	25-27				7-9	16-18	19-21
50-54	19-21	22-24	0-3	4-6	16-18		13-15	
45-49		19-21						16-18
40-44	16-18			0-3	13-15		10-12	13-15
35-39	13-15					4-6	7-9	10-12
30-34		16-18			10-12			
25-29	10-12	13-15				0-3	4-6	7-9
20-24	7-9				7-9		0-3	
15-19		10-12			4-6			4-6
10-14	4-6	7-9			0-3			
5-9	0-3	0-6						0-3
0-4								

INSTRUCTIONS:

Consult percentages of problems indicated in summary table of printout. Place a dot at the proper interval and connect dots. The resultant graph will provide an analysis of how girls in a specific classroom compare with girls in 368 classrooms. It should also be noted that in some problem areas girls have fewer problems (self-control and verbal). The fact that problems are at a comparatively high percentile means that the vast majority of classrooms do not have high percentages of suspected problems in these areas.

Note: solid line is posttesting observation Spring of 1975 as sixth graders
dotted line is pretesting observation Fall of 1972 as third graders

Figure 3

Dixie Bee Pre and Post Comparisons on a Sample of Children For Suspected Problems

Psychograph to Interpret Percentage of Suspected Problems Against Comparative Classroom Norms for Males

Percentile Equivalent	Self	Group	Self-Control	Verbal	Energy	Vocational	Cognitive	Attitude
	Suspected Problem Areas (percentages)							
99	52-54+	46-48+	34-36+	26-30+	25-27+	43-45+	55-57+	49-51+
95-98	49-51	34-45	32-33	16-25	19-24	40-42	46-54	46-48
90-94	46-48	28-33		13-15	13-18	37-39	37-45	37-45
85-89	40-45	25-27	19-21			31-36	31-36	34-36
80-84	34-39		16-18	10-12	10-12	28-30	28-30	31-33
75-79		22-24	13-15		7-9	22-27	25-27	25-30
70-74	31-33	19-21	10-12	7-9			22-24	
65-69	28-30			4-6			19-21	
60-64	25-27	16-18	7-9					22-24
55-59		13-15				13-21	16-18	19-21
50-54	22-24			0-3		10-12	13-15	
45-49	19-21		4-6		0-3	7-9		16-18
40-44		10-12					10-12	
35-39	16-18							13-15
30-34	13-15	7-9	0-3				7-9	
25-29	10-12					4-6		
20-24		4-6					4-6	10-12
15-19	7-9	0-3				0-3	0-3	
10-14	4-6							7-9
5-9	0-3							4-6
0-4								0-3

INSTRUCTIONS:

Consult percentages of problems indicated in summary table of printout. Place a dot at the proper interval and connect dots. The resultant graph will provide an analysis of how boys in a specific classroom compare with boys in 368 classrooms. It should also be noted that in some problem areas boys have fewer problems (verbal and energy). The fact that problems are at a comparatively high percentile means that the vast majority of classrooms do not have high percentages of suspected problems in these areas.

N = 28

Psychograph to Interpret Percentage of Suspected Problems Against Comparative Classroom Norms for Females

Percentile Equivalent	Self	Group	Self-Control	Verbal	Energy	Vocational	Cognitive	Attitude
	Suspected Problem Areas (percentages)							
99	55+	64-66+	25-27+	24-30+	64-66+	34-36+	61-63+	49-51+
95-98	52-54	49-63	16-24	22-23	49-63	31-33	43-60	46-48
90-94	46-51	46-48	10-15	16-21	37-48	25-30	37-42	43-45
85-89	37-45	43-45		16-18	34-36	19-24	31-36	37-42
80-84	34-36	37-42	7-9	13-15	28-33	16-18	25-30	31-36
75-79	31-33	34-36				13-15		
70-74	28-30	31-33		10-12	25-27		22-24	28-30
65-69	25-27		4-6		22-24		19-21	25-27
60-64		28-30		7-9	19-21	10-12		22-24
55-59	22-24	25-27				7-9	16-18	19-21
50-54	19-21	22-24	0-3	4-6	16-18		13-15	
45-49		19-21						16-18
40-44	16-18			0-3	13-15		10-12	13-15
35-39	13-15					4-6	7-9	10-12
30-34		16-18			10-12			
25-29	10-12	13-15				0-3	4-6	7-9
20-24	7-9				7-9		0-3	
15-19		10-12			4-6			4-6
10-14	4-6	7-9			0-3			
5-9	0-3	0-6						0-3
0-4								

INSTRUCTIONS:

Consult percentages of problems indicated in summary table of printout. Place a dot at the proper interval and connect dots. The resultant graph will provide an analysis of how girls in a specific classroom compare with girls in 368 classrooms. It should also be noted that in some problem areas girls have fewer problems (self-control and verbal). The fact that problems are at a comparatively high percentile means that the vast majority of classrooms do not have high percentages of suspected problems in these areas.

Note: solid line is posttesting observation Spring of 1975 as sixth graders
dotted line is pretesting observation Fall of 1972 as third graders

Figure 4

Rio Grande Pre and Post Comparisons on a Sample of Children For Suspected Problems

Psychograph to Interpret Percentage of Suspected Problems Against Comparative Classroom Norms for Males

Percentile Equivalent	Suspected Problem Areas (percentages)								
	Self	Group	Self-Control	Verbal	Energy	Vocational	Cognitive	Attitude
99	52-54+	46-48+	34-36+	26-30+	25-27+	43-45+	55-57+	49-51+
95-98	49-51	34-45	22-33	16-25	19-24	40-42	46-54	46-48
90-94	46-48	28-33		13-15	13-18	37-39	37-45	37-45
85-89	40-45	25-27	[illegible]-21			31-36	31-36	34-36
80-84	34-39		[illegible]-18	10-12	10-12	28-30	28-30	31-33
75-79		22-24	13-[illegible]		7-9	22-27	25-27	25-30
70-74	31-33	19-21	10-12	7-9			22-24	
65-69	28-30			4-6		16-[illegible]	19-21	
60-64	25-27	16-[illegible]	7-9					22-24
55-59		13-[illegible]			[illegible]-6	13-15	16-18	19-21
50-54	22-24			0-3		10-12	13-15	
45-49	19-21		4-6		0-3	7-9		16-18
40-44		10-12					10-12	
35-39	16-18							13-15
30-34	[illegible]-15	7-9	0-3				7-9	
25-29	10-[illegible]					4-6		
20-24		4-6					4-6	10-12
15-19	[illegible]-9	0-3				0-3	0-3	
10-14	4-6							7-9
5-9	0-3							4-6
0-4								0-3

INSTRUCTIONS:

Consult percentages of problems indicated in summary table of printout. Place a dot at the proper interval and connect dots. The resultant graph will provide an analysis of how boys in a specific classroom compare with boys in 368 classrooms. It should also be noted that in some problem areas boys have fewer problems (verbal and energy). The fact that problems are at a comparatively high percentile means that the vast majority of classrooms do not have high percentages of suspected problems in these areas.

Psychograph to Interpret Percentage of Suspected Problems Against Comparative Classroom Norms for Females

Percentile Equivalent	Suspected Problem Areas (percentages)							
	Self	Group	Self-Control	Verbal	Energy	Vocational	Cognitive	Attitude
99	55+	64-66+	25-27+	24-30+	64-66+	34-36+	61-63+	49-51+
95-98	52-54	49-63	16-24	22-23	49-63	31-33	43-60	46-48
90-94	46-51	46-48	10-15	19-21	37-48	25-30	37-42	43-45
85-89	37-45	43-45		16-18		19-24	31-36	37-42
80-84	34-36	37-42	7-9	13-15	28-33	16-18	25-30	31-36
75-79	31-33	34-[illegible]				13-15		
70-74	28-30	[illegible]-33		[illegible]-12	25-27		22-24	28-30
65-69	25-27		4-6		22-24		[illegible]-21	25-27
60-64		28-30		7-9	19-21	10-12		22-24
55-59	22-24	25-27				7-9	16-[illegible]	19-21
50-54	19-[illegible]	22-24	0-3	4-6	16-18		13-[illegible]	
45-49		19-21						16-18
40-44	16-18			0-3	13-15		10-12	13-15
35-39	13-15					4-6	7-9	10-12
30-34		16-18			10-12			
25-29	10-12	13-15				0-3	4-6	7-9
20-24	7-9				7-9		0-3	
15-19		10-12			4-6			4-6
10-14	4-6	7-9			0-3			
5-9	0-3	0-6						0-3
0-4								

INSTRUCTIONS:

Consult percentages of problems indicated in summary table of printout. Place a dot at the proper interval and connect dots. The resultant graph will provide an analysis of how girls in a specific classroom compare with girls in 368 classrooms. It should also be noted that in some problem areas girls have fewer problems (self-control and verbal). The fact that problems are at a comparatively high percentile means that the vast majority of classrooms do not have high percentages of suspected problems in these areas.

-105-

N = 29

Note: solid line is posttesting observation Spring of 1975 as sixth graders
dotted line is pretesting observation Fall of 1972 as third graders

Table 91

Comparison of Suspected Problems Percentages Across Schools Pre and Post

West Vigo				Rio Grande				Dixie Bee				Problem
Pre		Post		Pre		Post		Pre		Post		
M	F	M	F	M	F	M	F	M	F	M	F	
7 (15)	21 (50)	15 (30)	13 (35)	0 (5)	21 (50)	18 (35)	14 (35)	12 (25)	26 (65)	12 (25)	33 (75)	Self Concept
7 (30)	39 (80)	15 (55)	39 (80)	12 (40)	21 (45)	6 (20)	28 (60)	6 (20)	40 (80)	12 (40)	46 (90)	Group Interaction
30 (95)	17 (95)	15 (75)	4 (65)	0 (30)	0 (50)	25 (95)	14 (90)	31 (95)	6 (65)	18 (80)	20 (95)	Self Control
30 (99)	17 (85)	23 (95)	8 (60)	0 (50)	7 (60)	6 (65)	14 (80)	18 (95)	13 (80)	12 (80)	20 (95)	Verbal
23 (95)	52 (95)	15 (90)	34 (85)	0 (45)	35 (85)	0 (45)	35 (85)	0 (45)	40 (90)	0 (45)	46 (90)	Physical Energy
15 (55)	8 (55)	38 (90)	21 (85)	31 (85)	21 (85)	12 (50)	21 (85)	37 (90)	6 (35)	25 (75)	40 (99)	Vocational Development
23 (70)	21 (65)	0 (15)	34 (85)	12 (40)	28 (80)	6 (20)	28 (80)	12 (40)	20 (35)	12 (40)	40 (99)	Cognitive Motivation
38 (90)	4 (15)	23 (60)	8 (25)	12 (20)	7 (25)	6 (5)	7 (25)	6 (5)	13 (40)	12 (20)	13 (40)	School Attitude

Note: number under column refers to the percent of boys or girls in the repective school who manifested a suspected problem in that area. The number in parentheses refers to the classroom percentile for boys or girls comparing these groups with the norming of 279 classrooms around the country. A higher percentile rank means that by comparison with the normative group this particular group is higher. For example, In West Vigo on the pre-testing 30 percent of the boys showed a verbal skill deficit in the suspected area. This high a percentage of boys with that problem is above 99 percent of classrooms in the normative group. Conversely , a lower percentile means that comparatively speaking, there are fewer problems than in other classrooms.

An inspection of the figures and the table provide the following observations.

Self-Concept

In general all of the schools show a comparatively low frequency of problems in this area. By comparison with the norm group of 279 classrooms, the West Vigo children in this sample appear to consider themselves fairly competent. The only exception to this are the girls at Dixie Bee who have an above average number of problems indicated in this area. The fact that a higher percentage of problems is indicated in the sixth grade than in the third grade is most likely developmental in the sense that other studies with these data reveal that third graders tend to rate themselves more competent than sixth graders, a fact probably associated with greater knowledge of themselves and the competitive nature of academic learning.

Group Interaction

In terms of group interaction problems, boys in the Vigo Corporation schools tested here appear to have a below-average or average frequency of problems in this area The frequency of problems appears to have increased - just about doubling for both West Vigo and Dixie Bee over the three years for the same boys. However, at Rio Grande it appears to have decreased by about half. For girls group interaction problems were initially very high and they either stayed that way or increased slightly. Rio Grande again has the lowest frequency of group problems.

Self-Control

The district sample here appears to be quite high in self-control problems. Rio Grande is again the best off of the three schools initially, but shows a very great increase in such problems for both boys and girls. On the contrary, West Vigo shows a substantial decrease in self-control problems. Dixie Bee shows a decrease in self-control problems for boys, but an increase for girls.

Verbal Deficits

This problem area relates to reticence , inability to verbalize well , shyness etc. Rio Grande subjects were lowest on this problem initially as well as at the conclusion of the study. However, an increase in such problems is noted for Rio Grande. West Vigo starting with a very high percentage of problems in this area substantially reduced the percentage of such problems, but they still remain comparatively high. Dixie Bee, again shows a decline in such problems for boys, but an increase for girls.

Physical Energy Deficits

This problem area relates to lack of task-orientation, lack of competitiveness etc. Because of the problem's association with outdoor physical skills, girls tend to score higher on this. The norms are adjusted accordingly. Even so, the level for girls in the Vigo School Corporation for these subjects is quite high. No change is noted for boys or girls at either Rio Grande or Dixie Bee, but some decline is noted at West Vigo.

Vocational Development

Career awareness or knowledge and interest in a variety of occupations is what is indicated in this area. A low score can mean either a constricted range of interests or a decision to narrow one's interests to a specific field. This is confounded here. The high scores noted may reflect either of the conditions.

Cognitive-Motivation Deficits

Both West Vigo and Rio Grande show marked declines in such problems for boys and increases for girls. A marked increase in such problems is noted for girls at Dixie Bee.

Attitude

This problem area reflects a good attitude towards school with a conviction that the child has some control over what goes on in the school setting. For boys the frequency of such problems declines at both West Vigo and Rio Grande and increases at Dixie Bee. For girls it remains the same at Rio Grande and Dixie Bee and increases slightly at West Vigo.

Since there are only percentages available from these data, and because they are based on a sample of third graders who may not be representative of the total group tendencies conclusions should be tentative. These conclusions are , however, not inconsistent with the other data analyzed. They suggest:

1. that West Vigo children showed a decline in self-control problems, a decline in verbal problems, physical energy problems, cognitive motivation and attitudinal roblems, particularly for boys.

2. that Rio Grande had generally the lowest percentage of problems of the three schools, showed a decrease in group interaction problems, cognitive motivation and attitude problems, but a marked increase in self-control problems and some increase in verbal problems.

3. that Dixie Been showed an increase in group interaction problems, and mixed changes in many of the other problem areas.

Trend Analysis

The above tendencies may be still further clarified by the final analysis of this study. For purposes of diagnostic assessment and evaluation of trends with BCCI data it is possible to group factor combinations of individuals under 64 possible combinations.[2] These combinations may be

---

[2] This procedure will not be detailed here, but involves a further factor analysis of the six multi-trait multi-method factor scores into a two dimensional grid that most generally and completely describes the individual. The two major axes are:(1) energetic versus passive behavior, and sociability-affiliation versus reserved individuality. Further information is available regarding this technique from the Professional Consultant's Handbook of the BCCI (Barclay, 1975) and a paper "Operationalizing Individual Differences," (unpublished manuscript, J. R. Barclay, University of Kentucky, 1975).

described as composites reflecting an energetic versus passive outlook and an outgoing sociable tendency versus a reserved individualistic one.

The same subjects were used for this analysis as for the previous one, i.e. the third through sixth grade sample of 91 children. The purpose of this analysis was to determine whether there were any overall tendencies shown in the mean coordinates and percentages of children classified in each of the four coordinates. Table 91 provides an analysis of the percentage of children found in each of the four coordinates by school and pre-post comparison.

Table 9.2

Overall Temperament Comparisons
Between Schools in Percents

School		Energetic Introverted	Energetic Extroverted	Passive Introverted	Passive Extroverted
Dixie Bee	(pre)	17%	17%	35%	28%
	(post)	32%	14%	21%	32%
West Vigo	(pre)	20%	20%	47%	11%
	(post)	25%	16%	38%	19%
Rio Grande	(pre)	38%	13%	38%	10%
	(post)	32%	25%	35%	7%

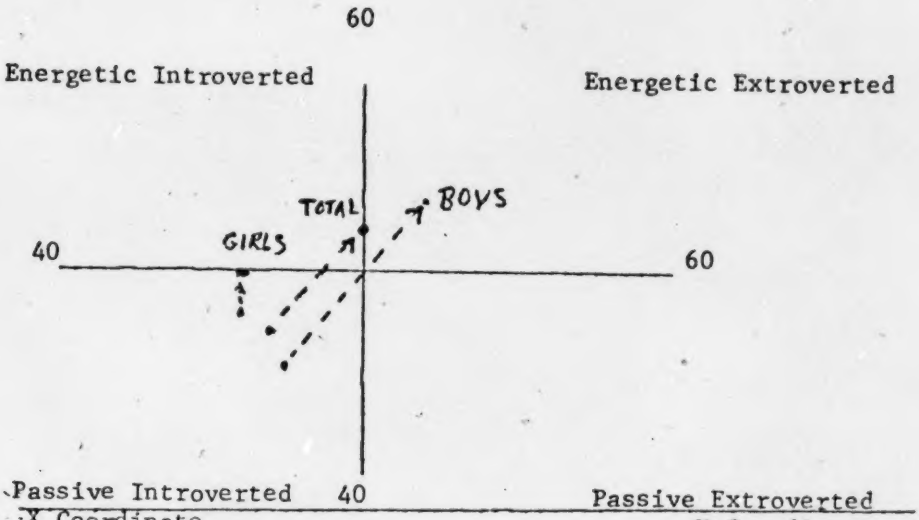
N = 91 children

The overall changes that took place may be seen more distinctly by plotting the mean coordinates for the two dimensions pre and post for each school. Figures 5, 6 and 7 provide this information.

Figure 5

Overall Plot of Changes for

Rio Grande



X Coordinate

Energetic Passive	Pre	Post
Mean Boys	46	53
Mean Girls	49	50
Mean Total	47	51

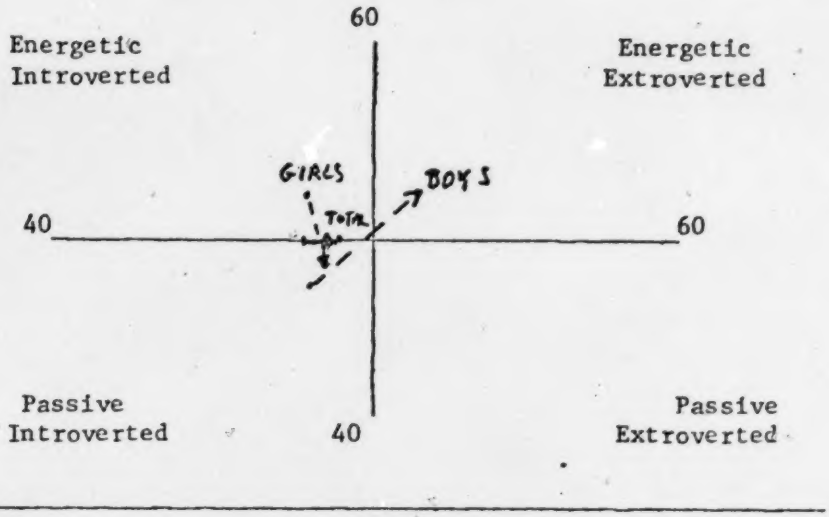
Y Coordinate

Extroverted-Introverted	Pre	Post
Mean Boys	48	52
Mean Girls	47	47
Mean Total	47	50

Figure 6

Overall Plot of Changes for

West Vigo

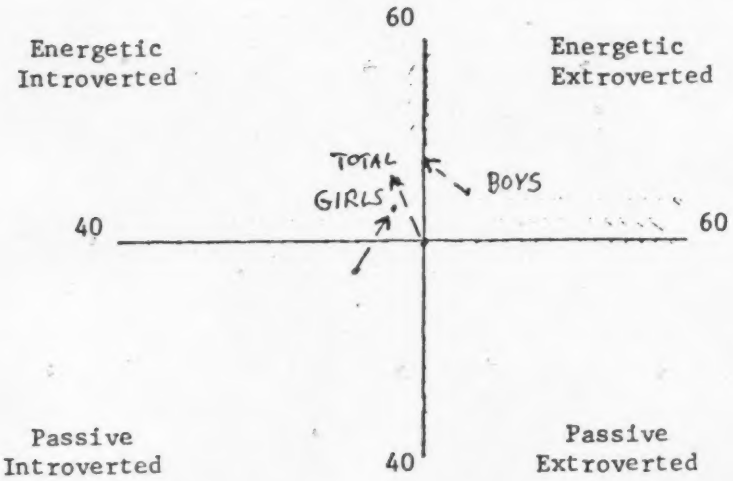


X Coordinate			Y Coordinate		
Energetic-Passive	Pre	Post	Extroverted-Introverted	Pre	Post
Mean Boys	48	52	Mean Boys	48	51
Mean Girls	52	49	Mean Girls	48	49
Mean Total	50	50	Mean Total	48	49

Figure 7

Overall Plot of Changes for

Dixie Bee



X Coordinate			Y Coordinate		
Energetic-Passive	Pre	Post	Extroverted-Introverted	Pre	Post
Mean Boys	52	53	Mean Boys	52	50
Mean Girls	49	51	Mean Girls	48	49
Mean Total	50	52	Mean Total	50	49

Figure 5 indicates that the general movement for Rio Grande boys was from passive introverted towards energetic extroverted. Girls still remained in the introverted half of the coordinates but became slightly more energetic. The total movement was from passive introversion to energetic extroversion.

Figure 6 for West Vigo indicates a similar movement to that of Rio Grande from passive introversion to energetic extroversion. Girls tended to become more passive and remained on the introversion side. The total movement appears to have been very minor along the introversion-extroversion coordinate and towards extroversion.

Figure 7 for Dixie Bee shows something different. Here boys tend to move from the energetic extroverted sector towards more introversion. Girls move from the passive introverted sector to the energetic introverted sector, and the total movement is towards energetic introversion.

These changes are indeed minor, and may reflect developmental differences as well as interaction with school styles. But it is interesting to note that there is a general movement for boys in Rio Grande and West Vigo towards the position initially occupied by Dixie Bee. Dixie Bee on the other hand tends to move towards more introversion and restraint.

Overall Evaluation

On the basis of the foregoing research studies, it is apparent that considerable change took place in the Vigo Corporation schools as a consequence of this project. What are the conclusions that can be drawn form this evaluation? They can be summarised as follows:

1. West Vigo, through considerable effort provided some limited increase in the rate of achievement of children, specifically on the Nelson Reading Tests.
2. West Vigo was particularly successful in changing certain aspects of the educational climate--particularly for girls. Children who proceeded from West Vigo to the junior high level did not show a statistically higher level of problems than children from the other schools. On the other hand, the initial assessment of problems at West Vigo showed a higher rate of such suspected problems.
3. Rather distinctive differences exist in the climate of the several schools. These differences are due first of all to socioeconomic class differences, and then to relatively different approaches to coping with students and problem-solving.

These are the three major conclusions of this evaluation. There are many minor conclusions, but they have already been indicated in the respective chapters.

Recommendations

The three distinct climates of the schools tend to generate different outcomes. Perhaps, rather than having three schools each reflecting a different philosophy it might be well to have within each of the schools elements of all three philosophies. For all children can learn from alternate learning

strategies. Didactic instruction including good lecture approaches provides an organizer for students to utilize in grasping large ideas and their implications. Small group discussion techniques provide an opportunity for developing interpersonal verbal and problem-solving skills. Contracting with students allows creative students to blossom and develop new insights. Thus, it might be relevant to examine in the school district ways and means of: (1) more equitably balancing the SES groupings across the schools, and (2) providing a range of alternate learning strategies within each school. For reliance on straight didactic lectures and cognitive assimilation tends to build memory skills and may be most appropriate for highly motivated academically oriented students. Reliance on a flexible structure and group processes may build a student group that is highly conventional and prone to conformity. The total use of reinforcement theory may build a student body dependent on external reinforcement for learning.

Efforts should continue to be made to decrease teacher negative expectations since this appears to be a major determinant to lower achievement. The best avenue to this objective is to continue to utilize social and affective skill development as a viable and valid goal of learning. To keep this objective in mind, it is most helpful to conduct regular and systematic screening of children in the social and affective domains, and to utilize the results for direct intervention strategies.

To this end, the principal evaluator suggests that the school district consider the regularized use of a measure of social-affective growth in the schools. With natural bias, he believes that the BCCI and the BLNI have demonstrated their value to the school district as needs assessment techniques in the school. Considerable evidence (cited earlier) document the

progress other schools have made utilizing the instrumentation. In all fairness to the instrumentation used, the earlier reports appear to have had some effect on the changes noted at West Vigo since they were summarized in newsletters. One limitation of the use of the BCCI was the fact that it was not utilized (as far as the evaluator knows) in the format utilized by other school districts where teams of teachers, principals, and counselors reviewed the results and planned some individual and curriculum strategies specifically designed to provide preventive interventions. In any event, it is hoped that the West Vigo schools will consider the use of some measure of social-affective growth beginning at the preschool level and continuing at alternate grade levels through the elementary school.

REFERENCES*

8) Barclay, James R. Effecting Behavior Change in the Elementary Classroom: An Exploratory Study. Journal of Counseling Psychology 14, #3. 1967 240-247.

43) Barclay, James R. Evaluating the Effectiveness of Affective Interventions in Schools, unpublished manuscript, University of Kentucky, 1974.

14) Barclay, James R. Expectancy and Socail Interaction in Classroom Learning (paper presented at APA Symposium "What Experimental Psychology has to offer--Donor Learning Theory and Principles; Recipient, the Classroom" APA National Convention, Miami, Florida, September 1970.

3) Barclay, James R. Interest Patterns Associated with Measures of Social Desirability: Some Implications for dropouts and the Culturally Disadvantaged. Personnel and Guidance Journal 45, #1, 1966, 56-60.

16) Barclay, James R. Measuring the Social Climate of the Classroom, Monograph #40, Educational Technology, 1971.

33) Barclay, James R. Multiple Input Assessment and Preventive Intervention, School Psychology Digest, Spring 1973, 13-18.

34) Barclay, James R. Needs Assessment in the Elementary School, Chapter in Evaluating Educational Performance (A Sourcebook of Methods, Instruments, and Examples), Herbert J. Walberg (Editor), McCutchan Publishing Company, Berkeley, California, 1974, 47-56.

15) Barclay, James R. A Research Manual for the Barclay Classroom Climate Inventory. Educational Skills Development Inc., Suite 321, 431 South Broadway, Lexington, Kentucky, 1970, 270 pp.

13) Barclay, James R. A social Learning Model for Teacher Education. Educational Horizons 48, #2, Winter 1970.

2) Barclay, James R. Sociometric Choices and Teacher Ratings as Predictors of School Dropout, Journal of School Psychology 4, #2, Winter 1966, 40-44.

5) Barclay, James R. Sociometry: Rationale and Technique for Effecting Behavior Change in the Elementary School, Personnel and Guidance Journal 44, #10, 1966, 1067-1076.

35) Barclay, James R. System-Wide Analysis of Social Interaction and Affective Problems in Schools, invited address, the Fifth Banff Intervational Conference on Behavior Modification, 1973, Chapter 14, in Park O. Davidson, Frank M. Clark, and Leo A. Hamerlynck (editors) Evaluation of Behavioral Programs in Community, Residential, and School Settings, Research Press, Champaign, Illinois, 1974.

4) Barclay, James R. Variability in Sociometric Scores and Teachers' Ratings as Related to Teacher Age and Sex. Journal of School Psychology 5. #1, 1966, 52-58.

17) Barclay, James R., Stilwell III, William E., Santoro, David A., and Barclay, Lisa K. Appraising Individual Differences in the Elementary Classroom. A Users Manual of the Barclay Classroom Climate Inventory. Educational Skills Development Inc., 431 South Broadway, Suite 321, Lexington, Kentucky, (First edition, 1971, second edition, 1972, third edition completely revised, 1974).

1) Barclay, Lisa K. amd Barclay, James R. Measured Indices of Perceptual Distortion and Impulsivity as Related to Sociometric Scores and Teacher Ratings. Psychology in the Schools 2, #4, 372-375.

9) Brown, Patricia Westbrook. An Evaluation of Three Methods of Changing Interpersonal Behavior in Fifth Graders, unpublished master's thesis, California at Hayward, 1967.

20) Church, June Spicer. Effect of Individual and Group Cue-Reinforcement Counseling as Interventional Techniques for Modifying Elementary Classroom Behaviors, unpublished Ph.D. dissertation, University of Kentucky, 1972.

6) Davis, Diane. The Validity and Reliability of a Sociometric Device, unpublished master's thesis, Idaho State University, 1967.

10) Ferris, Ann E. A descriptive Analysis of the Characteristics of Elementary Reticent Males, unpublished master's thesis, California State University at Hayward, 1968.

7) Forsyth, Frances and Jackson, Elizabeth. A Comparison of Upper Elementary School Children's Responses on a Vocational Preference Inventory and a Semantic Differential in Relation to a Social Desirability Grid. unpublished master's thesis, California State University at Hayward, 1966.

52) Jackson, D. Multi-method factor analysis in the evaluation of convergent and discriminant validity. Psychological Bulletin 72, 1969, 30-49.

48) Jones, R. Wayne (Georgia State University), Blaney, Robert L. (Emory University), and King, Patricia J. (Georgia State University). Classroom Climate and School Achievement: Self-Concept, Sex Differences, and Teacher Attitude in Three Contrasting School Environments, paper presented at the American Psychological Association Convention, New Orleans, Louisiana, September 1974.

12) Kennedy, Daniel. Sociometric Assessment, A Validity Study, paper presented at the 1969 American Personnel and Guidance Association Convention in Las Vegas, Nevada.

53) Royce, J.R. A Multi-factor Theory of Individuality, Chapter in Multi-variate Analysis and Psychological Theory. (J.R. Royce, editor), Academic Press, London, 1973, 305-407.

50) Rutledge, Pearl Black. Effects of Short Term Multiple Treatment Group Counseling on Social Interaction Perceptions of Isolate Regectees in Fifth and Sixth Grades, unpublished Ph.D. dissertation, University of Kentucky, December 1974.

11) Stickel, Nancy. A Descriptive Analysis of the Characteristics of Elementary Reticent Females, unpublished master's thesis, California State University at Hayward, 1968.

30) Stilwell III, William E., Brown, Patricia W., and Barclay, James R. Effects of Three Classroom Management Methods on Classroom Interaction of Fifth Graders, Psychology in the Schools 10, 1973, 365-372.

19) Tapp, George S. Convergent and Discriminant Validity of the Barclay Classroom Climate Inventory, unpublished Ph.D. dissertation, University of Kentucky, Lexington, Kentucky, 1972.

54) Vandenberg, S.G. Human behavior genetics: present status and suggestions for further research, Merrill-Palmer Quarterly of Behavior and Development 15, #1, 101-154.

55) Strnad, Leonard, Kehle, T.J. , Guidubaldi, J. Planning, Implementing and Evaluating an Educational Assessment System for Local Learning-Development Team Decision Making Elyria City Schools Project #45-73-414, 1974-75, ESEA Title III Continuation Application.

56) Brown, Wesley . Relationships in the Social-Affective Classroom Climate and Teacher Perceived Problem Students, Ph.D. dissertation, Kent State University, March, 1975.

57) Kehle, T.J. and Guidubaldi, J. Effect of EMR Placement Models on Affective and Social Development Using the Barclay Classroom Climate Inventory , project director, Thomas Noffsinger, ESEA Title III EMR Program Development #45-73-418-3 Mentor, Ohio. 1975.

Barclay, The Professional Consultant's Handbook of the BCCI, 1975.

Barclay, J. R. "Operationalizing Individual Differences," unpublished manuscript, University of Kentucky, 1975.